ORDER NO. DSC1112063CE
B26

Service Manual

Digital Camera/Lens Kit/Double Lens Kit/Body

LUMIX

Model No. DMC-GX1KPP
DMC-GX1KPC
DMC-GX1KEB
DMC-GX1KEC
DMC-GX1KEE
DMC-GX1KEF
DMC-GX1KEG
DMC-GX1KGN
DMC-GX1PP
DMC-GX1PC
DMC-GX1EB
DMC-GX1EC
DMC-GX1EE
DMC-GX1EF
DMC-GX1EG
DMC-GX1GC
DMC-GX1GD
DMC-GX1GH
DMC-GX1GK
DMC-GX1GN
DMC-GX1GT

Panasonic

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DMC-GX1XPP
DMC-GX1XPC
DMC-GX1XEB
DMC-GX1XEC
DMC-GX1XEE
DMC-GX1XEF
DMC-GX1XEG
DMC-GX1XGC
DMC-GX1XGD
DMC-GX1XGH
DMC-GX1XGK
DMC-GX1XGN
DMC-GX1XGT
DMC-GX1WGC
DMC-GX1WGD
DMC-GX1WGH
DMC-GX1WGK
DMC-GX1WGT

Vol.1

Colour

[DMC-GX1K]
(K).....Black Type
(S).....Silver Type (except EC/EE/GN)
[DMC-GX1]
(K).....Black Type
(S).....Silver Type (except PC/EC/EE/EF/GK/GN)

[DMC-GX1X]
(K).....Black Type
(S).....Silver Type (except PC)
[DMC-GX1W]
(K).....Black Type
(S).....Silver Type

DMC-GX1K series: Interchangeable Lens (H-FS014042) is bundled.
DMC-GX1X series: Interchangeable Lens (H-PS14042) is bundled.
DMC-GX1W series: Interchangeable Lens (H-H014/H-FS014042) are bundled.

⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

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1 Safety Precautions

1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   There are special components used in this equipment which are important for safety. These parts are marked by

   ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent X-RADIATION, shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.
2. An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

1.2. Leakage Current Cold Check

1. Unplug the AC cord and connect a jumper between the two prongs on the plug.
2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1 MΩ and 5.2 MΩ. When the exposed metal does not have a return path to the chassis, the reading must be infinity.

1.3. Leakage Current Hot Check (See Figure 1.)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5 kΩ, 10 W resistor, in parallel with a 0.15 μF capacitor, between each exposed metallic part on the set and a good earth ground, as shown in Figure 1.
3. Use an AC voltmeter, with 1 kΩ/V or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 V RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 mA. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

Hot-Check Circuit

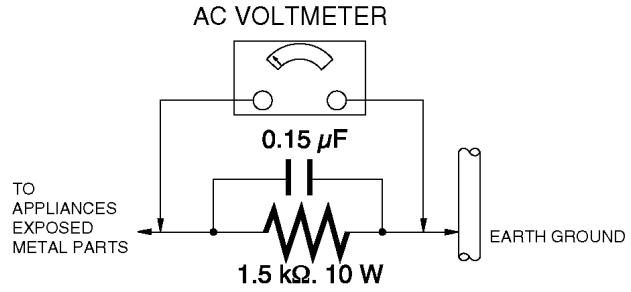


Figure. 1

1.4. How to Discharge the E. Capacitor on Capacitor P.C.B. Unit

CAUTION:

1. **Be sure to discharge the E. Capacitor on CAPACITOR P.C.B. UNIT.**
2. **Be careful of the high voltage circuit on CAPACITOR P.C.B. UNIT when servicing.**

[Discharging Procedure]

1. Refer to the disassemble procedure and remove the necessary parts/unit.
2. Put the insulation tube onto the lead part of Resistor (ERG5SJ102:1kΩ /5W).
   (An equivalent type of resistor may be used.)
3. Put the resistor between both terminals of E. Capacitor on CAPACITOR P.C.B. UNIT for approx. 5 seconds.
4. After discharging, confirm that the E. Capacitor voltage is lower than 10V by using a voltmeter.

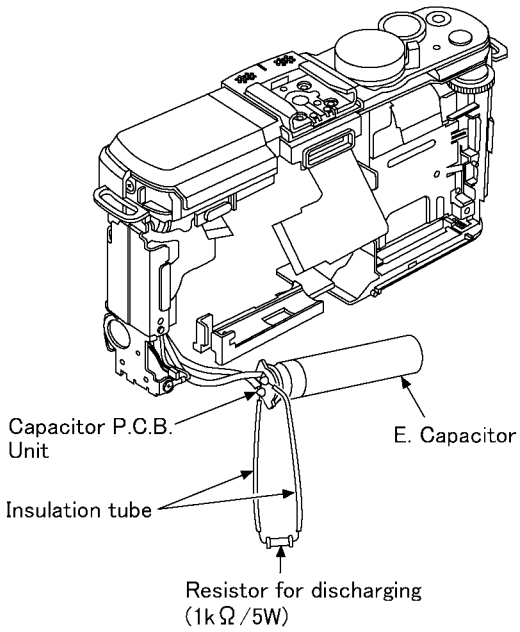


Fig. F1

2 Warning

2.1. Prevention of Electrostatic Discharge (ESD) to Electrostatically Sensitive (ES) Devices

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices.

> Examples of typical ES devices are IC (integrated circuits) and some field-effect transistors and semiconductor “chip” components.

The following techniques should be used to help reduce the incidence of component damage caused by electrostatic discharge (ESD).

1. Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.
2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
   CAUTION :
   Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

2.2. How to Recycle the Lithium Ion Battery (U.S. Only)

ENGLISH

A lithium ion battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

FRANÇAIS

L’appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion recyclable. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

2.3. Caution for AC Cord (For EB/GC/GH)

2.3.1. Information for Your Safety

IMPORTANT

Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.

WARNING

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

CAUTION

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

FOR YOUR SAFETY

DO NOT REMOVE THE OUTER COVER

To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.

2.3.2. Caution for AC Mains Lead

For your safety, please read the following text carefully.

This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.
A 5-ampere fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362
Check for the ASTA mark or the BSI mark on the body of the fuse.

ASTA mark	BSI mark

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.
A replacement fuse cover can be purchased from your local Panasonic Dealer.

If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.
There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.

If a new plug is to be fitted please observe the wiring code as shown below.
If in any doubt, please consult a qualified electrician.

2.3.2.1. Important

The wires in this mains lead are coloured in accordance with the following code:

Blue	Neutral
Brown	Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.

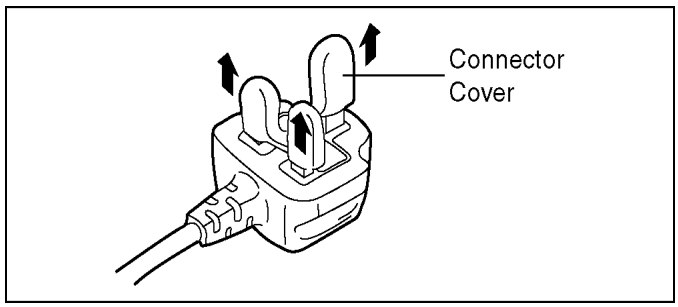
The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.

Earth Symbol	⏚

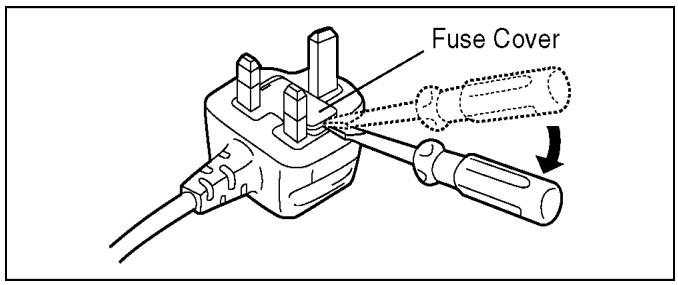
2.3.2.2. Before Use

Remove the Connector Cover as follows.

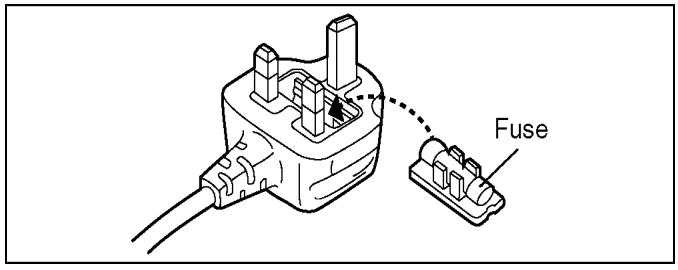


2.3.2.3. How to Replace the Fuse

1. Remove the Fuse Cover with a screwdriver.



2. Replace the fuse and attach the Fuse cover.



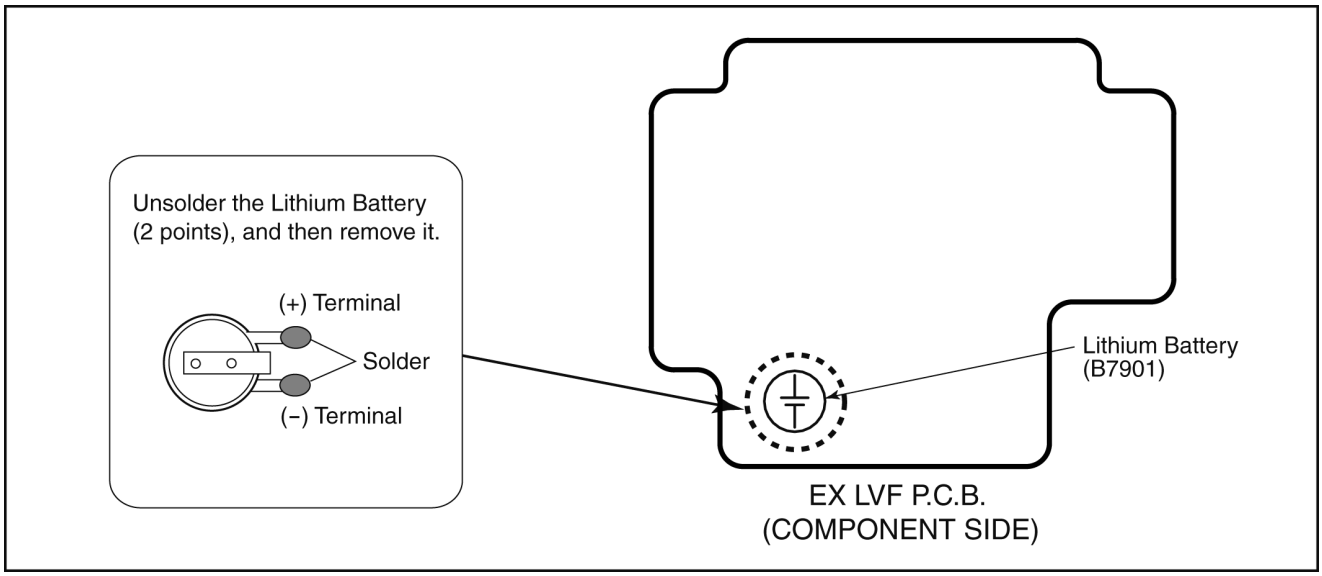
2.4. How to Replace the Lithium Battery

2.4.1. Replacement Procedure

1. Remove the EX LVF P.C.B. (Refer to Disassembly Procedures.)
2. Unsolder the each soldering point of electric lead terminal for Lithium battery (Ref. No. “B7901” at component side of EX LVF P.C.B.) and remove the Lithium battery together with electric lead terminal. Then replace it into new one.

NOTE:

The Type No. ML421 includes electric lead terminals.



NOTE:

This Lithium battery is a critical component.
(Type No.: ML421 **Manufactured by Energy Company, Panasonic Corporation.**)
It must never be subjected to excessive heat or discharge.
It must therefore only be fitted in requirement designed specifically for its use.
Replacement batteries must be of same type and manufacture.
They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.
Do not attempt to re-charge the old battery or re-use it for any other purpose.
It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer’s instructions.

(For German)

ACHTUNG

Explosionsgefahr bei falschem Anbringen der Batterie. Ersetzen Sie nur mit einem äquivalentem vom Hersteller empfohlenem Typ.
Behandeln Sie gebrauchte Batterien nach den Anweisungen des Herstellers.

(For French)

MISE EN GARDE

Une batterie de remplacement inappropriée peut exploser. Ne remplacez qu’avec une batterie identique ou d’un type recommandé par le fabricant. L’élimination des batteries usées doit être faite conformément aux instructions du manufacturier.

NOTE:

Above caution is applicable for a battery pack which is for DMC-GX1K/GX1X/GX1W/GX1 series, as well.

3 Service Navigation

3.1. Introduction

This service manual contains technical information, which allow service personnel's to understand and service this model.
Please place orders using the parts list and not the drawing reference numbers.
If the circuit is changed or modified, the information will be followed by service manual to be controlled with original service manual.

3.2. Important Notice

*When servicing, it is recommended dealing with Clean box. (Refer to "8.2. Clean Box" section of this service manual for details.)

3.2.1. Camera Body Unit

3.2.1.1. About Mount Box Unit (Ref. 4)

1. This Service Manual does not contain the following repair service information for "MOUNT BOX UNIT"(Ref.4), because it requires special facilities and equipment.
   a. Schematic diagram, Block diagram and P.C.B. layout.
   b. Parts list for individual parts.
2. If the "MOUNT BOX UNIT" is confirmed as defective, exchange the "MOUNT BOX UNIT" as a unit (supplied as service parts size).
3. Before exchanging the "MOUNT BOX UNIT", the performances must be carefully checked, by following the "7.Troubleshooting Guide" section of this service manual.

Important:

1. After replacing the MOUNT BOX UNIT, the mount box data has to be stored to the unit.
   The mount box unit supplied as service parts has affix the label of own configure data.
   By inputting these data into the adjustment software and writing these data to FLASH-ROM (IC6002), the shutter adjustment becomes needless.
   In addition, the adjustment software can read data encoded to QR code by using WEB camera with a close-up function.
   Refer to the adjustment instruction in the adjustment software for details.

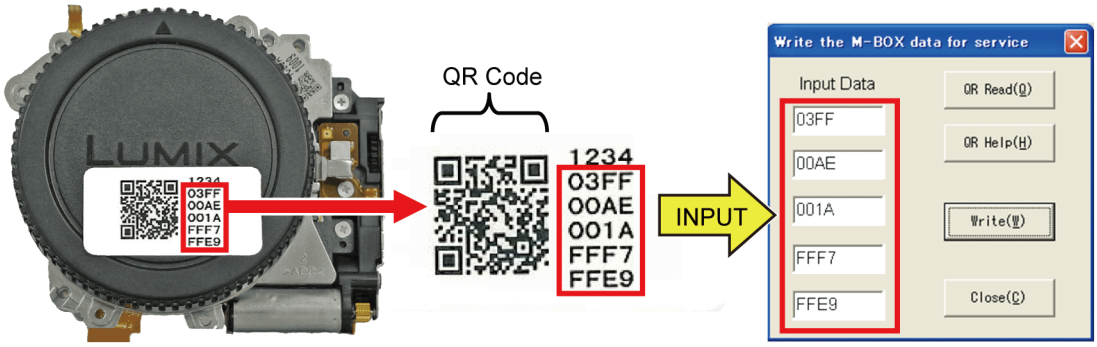


Fig. S1

2. The full adjustment must be performed after replacing the "MOUNT BOX UNIT", otherwise picture quality can not be meet with specification.

3.2.1.2. About Flexible Cable and Connector

Do not touch carelessly so that the foreign body should not adhere to the terminal part of flexible cable and connector.

Wipe off with a clean cloth and the cotton bud, etc. when the terminal part is dirty.

3.2.1.3. About Main P.C.B. (Ref. 1)

1. This Service Manual does not contain the following repair service information for “MAIN P.C.B.”(Ref.1), because it requires special facilities and equipment.
   a. Schematic diagram, Block diagram and P.C.B. layout.
   b. Parts list for individual parts.
2. When a part replacement is required for repairing “MAIN P.C.B.”, replace as an assembled P.C.B. parts.
   As for handling the defected P.C.B.s, contact the sales company service depart.
   *MAIN P.C.B. (VEP56158A: PP/PC/EE/GC/GD/GH/GK/GN/GT)
   *MAIN P.C.B. (VEP56158B: EB/EC/EF/EG)

Important (About Main P.C.B.):

1. Before exchanging the "MAIN P.C.B.", the performances must be carefully checked, by following the "7.Troubleshooting Guide" section of this service manual.
2. Before replacing the "MAIN P.C.B.", proceed the FLASH-ROM data backup from the unit. After replacing the MAIN P.C.B., overwrite the FLASH-ROM data with backup data from the unit first, then proceed the adjustment /inspection.
   If it is impossible to make a data backup due to the unit does not turns on the power and so on, additional adjustment (using the light box) is required.
   Refer to the adjustment instruction in the adjustment software for details.
3. The full adjustment must be performed after replacing the "MAIN P.C.B.", otherwise Picture quality can not be meet with specification.

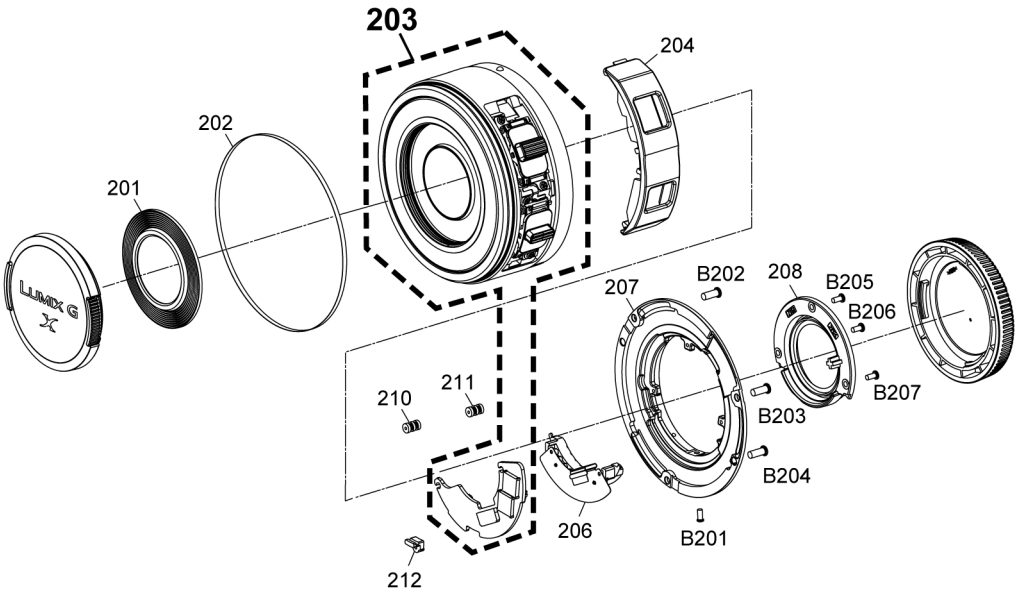
3.2.2. Lens Unit (Interchangeable Lens: H-PS14042)

3.2.2.1. About Lens MAIN Block unit (Ref. 203)

1. This Service Manual does not contain the repair service information for "LENS MAIN BLOCK UNIT"(Ref.203), because it requires special facilities and equipment.
2. "LENS MAIN BLOCK UNIT"(Ref.203) performance must be confirmed.
3. In case of the "LENS MAIN BLOCK UNIT"(Ref.203) defects, contact to the service department of sales company.

Ref. 203 LENS MAIN BLOCK UNIT (Not Supplied)

If this part is necessary, consult with the service department of sales company.



NOTE:
Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Fig. S2

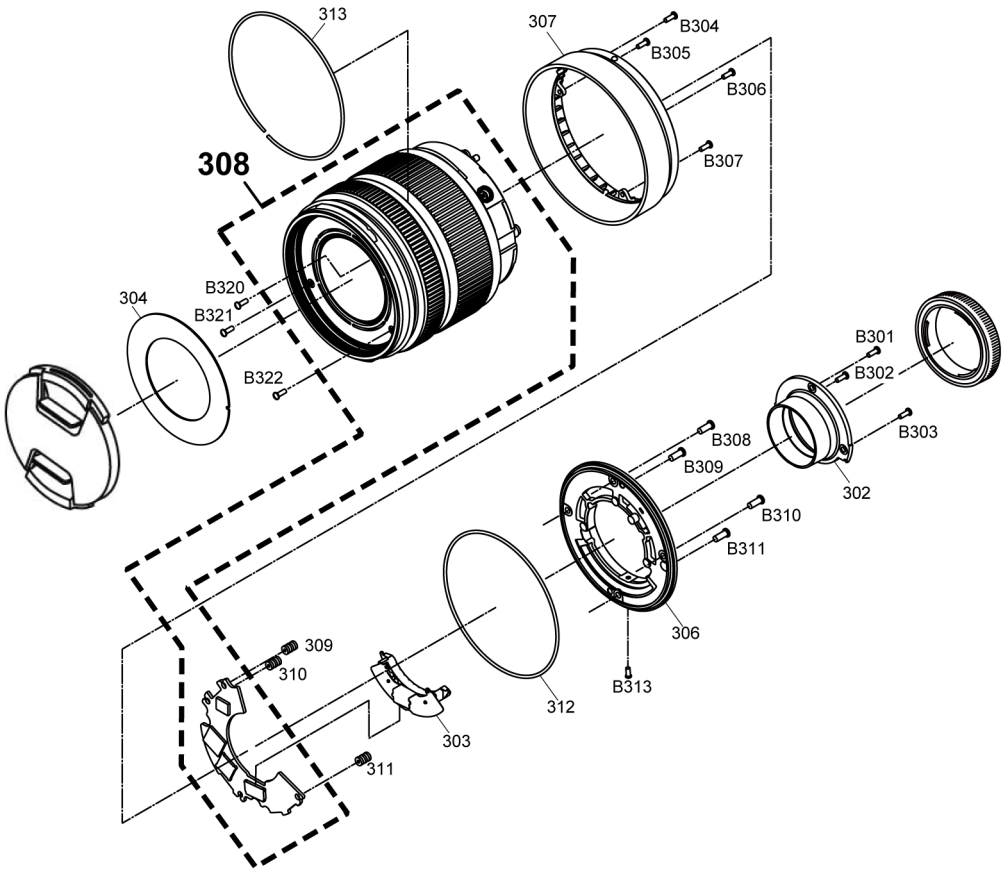
3.2.3. Lens Unit (Interchangeable Lens: H-FS014042)

3.2.3.1. About Lens Main Block Unit (Ref. 308)

1. This Service Manual does not contain the repair service information for "LENS MAIN BLOCK UNIT"(Ref.308), because it requires special facilities and equipment.
2. The "LENS MAIN BLOCK UNIT"(Ref.308) performance must be confirmed.
3. In case of the "LENS MAIN BLOCK UNIT"(Ref.308) defects, contact to the service department of sales company.

Ref. 308 LENS MAIN BLOCK UNIT (Not Supplied)

If this part is necessary, consult with the service department of sales company.



NOTE:
Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Fig. S3

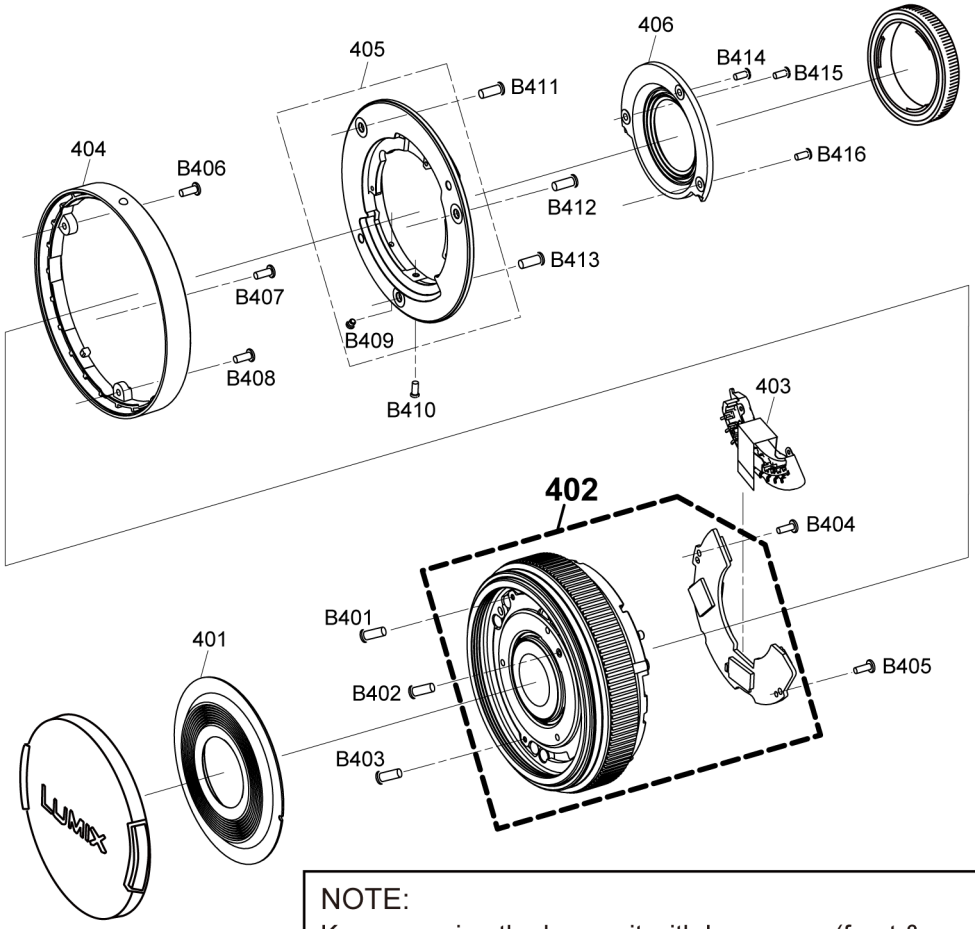
3.2.4. Lens Unit (Interchangeable Lens: H-H014)

3.2.4.1. About Lens MAIN Block unit (Ref. 402)

1. This Service Manual does not contain the repair service information for "LENS MAIN BLOCK UNIT"(Ref.402), because it requires special facilities and equipment.
2. "LENS MAIN BLOCK UNIT"(Ref.402) performance must be confirmed.
3. In case of the "LENS MAIN BLOCK UNIT"(Ref.402) defects, contact to the service department of sales company.

Ref. 402 LENS MAIN BLOCK UNIT (Not Supplied)

If this part is necessary, consult with the service department of sales company.



NOTE:

Keep covering the lens unit with Lens caps (front & rear), other than necessary cases.

Fig. S4

3.3. General Description About Lead Free Solder (PbF)

The lead free solder has been used in the mounting process of all electrical components on the printed circuit boards used for this equipment in considering the globally environmental conservation.

The normal solder is the alloy of tin (Sn) and lead (Pb). On the other hand, the lead free solder is the alloy mainly consists of tin (Sn), silver (Ag) and Copper (Cu), and the melting point of the lead free solder is higher approx.30°C (86°F) more than that of the normal solder.

Distinction of P.C.B. Lead Free Solder being used

The letter of “PbF” is printed either foil side or components side on the P.C.B. using the lead free solder.(See right figure)	PbF

Service caution for repair work using Lead Free Solder (PbF)

- The lead free solder has to be used when repairing the equipment for which the lead free solder is used. (Definition: The letter of “PbF” is printed on the P.C.B. using the lead free solder.)
- To put lead free solder, it should be well molten and mixed with the original lead free solder.
- Remove the remaining lead free solder on the P.C.B. cleanly for soldering of the new IC.
- Since the melting point of the lead free solder is higher than that of the normal lead solder, it takes the longer time to melt the lead free solder.
- Use the soldering iron (more than 70W) equipped with the temperature control after setting the temperature at 350±30°C (662±86°F).

Recommended Lead Free Solder (Service Parts Route.)

- The following 3 types of lead free solder are available through the service parts route.
  RFKZ03D01KS----------(0.3mm 100g Reel)
  RFKZ06D01KS----------(0.6mm 100g Reel)
  RFKZ10D01KS----------(1.0mm 100g Reel)

Note

* Ingredient: tin (Sn) 96.5%, silver (Ag) 3.0%, Copper (Cu) 0.5%, Cobalt (Co) / Germanium (Ge) 0.1 to 0.3%

3.4. How to Define the Model Suffix (NTSC or PAL model)

There are eight kinds of DMC-GX1 (Camera body unit), regardless of the colours.

- a) DMC-GX1 (Japan domestic model)
- b) DMC-GX1PP/PC
- c) DMC-GX1EB/EC/EF/EG/GH/GN
- d) DMC-GX1EE
- e) DMC-GX1GK
- f) DMC-GX1GT
- g) DMC-GX1GD
- h) DMC-GX1GC

What is the difference is that the “INITIAL SETTINGS” data which is stored in Flash-ROM mounted on MAIN P.C.B..

3.4.1. Defining methods:

To define the model suffix to be serviced, refer to the nameplate which is putted on the bottom side of the Unit.

a) DMC-GX1 (Japan domestic model)

The nameplate for this model shows the following Safety registration mark.

b) DMC-GX1PP/PC

The nameplate for these models show the following Safety registration mark.

c) DMC-GX1EB/EC/EF/EG/GH/GN

The nameplate for these models show the following Safety registration mark.

d) DMC-GX1EE

The nameplate for this model shows the following Safety registration mark.

e) DMC-GX1GK

The nameplate for this model shows the following Safety registration mark.

f) DMC-GX1GT

The nameplate for this model shows the following Safety registration mark.

g) DMC-GX1GD

The nameplate for this model shows the following Safety registration mark.

h) DMC-GX1GC

The nameplate for this model does not show any above Safety registration mark.

NOTE:

After replacing the MAIN P.C.B., be sure to achieve adjustment.

Refer to the adjustment instruction in the adjustment software for details.

3.4.2. INITIAL SETTINGS:

After replacing the MAIN P.C.B., make sure to perform the initial settings after achieving the adjustment by ordering the following procedure in accordance with model suffix of the unit.

1. IMPORTANT NOTICE:

Before proceeding Initial settings, make sure to read the following CAUTION.

CAUTION:(INITIAL SETTINGS)

---AFTER REPLACING THE MAIN P.C.B. ---

[Except "EG, EB, EC and EF" models : (VEP56158A is used as a Main P.C.B.)]

*. The model suffix can be chosen **JUST ONE TIME.**
(Effective model suffix : "PP/PC/GD/GC/GT/GK/EE/GN/GH and NONE(JAPAN)")

*. Once one of the model suffix has been chosen, the model suffix lists will not be displayed, thus, it can not be changed.

[Only for "EG, EB, EC and EF" models : (VEP56158B is used as a Main P.C.B.)]

*. From the beginning, only "EG, EB, EC and EF" are displayed as model suffix lists, and these are displayed from the second times as well.

2. PROCEDURES:

- **Precautions: Read the above “CAUTION” carefully.**
- **Preparation:**
  Attach the fully charged Battery, and insert the SD memory card.
  Confirm that it is not intelligent auto mode [iA] or intelligent auto plus mode [iA+].
  NOTE:
  If the unit is intelligent auto mode [iA] or intelligent auto plus mode [iA+], it does not display the initial settings menu.
- **Step 1. The temporary cancellation of “INITIAL SETTINGS”:**
  While pressing [DISP.], [AF/AE KOCK] and “[RIGHT] of Cursor buttons” simultaneously, turn the Power on.
- **Step 2. The cancellation of “INITIAL SETTINGS”:**
  Press the [PLAYBACK] button, then playback the picture.
  Press [AF/AE KOCK] and “[UP] of Cursor buttons” simultaneously, then turn the Power off.
  The LCD displays the “ ! ” mark before the unit powers down.

- **Step 3. Turn the Power on:**
  Set the mode dial to [P] (Program AE Mode), then turn the Power on.

• **Step 4. Display the INITIAL SETTING:**

While pressing [MENU/SET] and “[RIGHT] of Cursor buttons” simultaneously, turn the Power off.

The “INTIAL SETTINGS” menu is displayed.

There are two kinds of “INITIAL SETTINGS” menu form as follows:

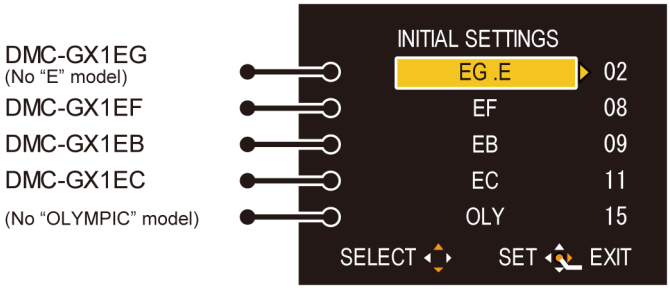
[CASE 1. After replacing MAIN P.C.B.]

[Except "EG, EB, EC and EF" models : (VEP56158A is used as a Main P.C.B.)]

When MAIN P.C.B. has just been replaced, all of the model suffix are displayed as follows. (two pages in total)

[Only for "EG, EB, EC and EF" models : (VEP56158B is used as a Main P.C.B.)]

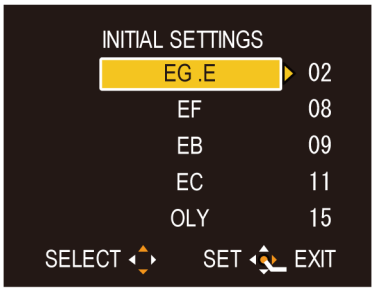
When MAIN P.C.B. has just been replaced, only 5 model suffix are displayed as follows.



[CASE 2. Other than "After replacing MAIN P.C.B."]

< Other than “EG/EB/EC/EF” models>

< Only “EG/EB/EC/EF” models>



• **Step 5. Choose the model suffix in “INITIAL SETTINGS”: (Refer to “CAUTION”)**

[Caution: After replacing MAIN P.C.B.]

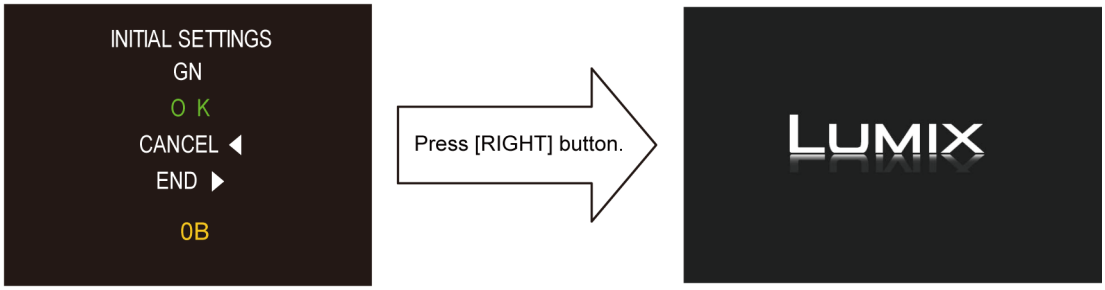
The model suffix can been chosen, **JUST ONE TIME**.

Once one of the model suffix have been chosen, the model suffix lists will not be displayed, thus, it can be changed.

Therefore, select the area carefully.

Select the area with pressing “[UP] / [DOWN] of Cursor buttons”.

• **Step 6. Set the model suffix in “INITIAL SETTINGS”:**
- Press the “[RIGHT] of Cursor buttons”.
- The only set area is displayed, and then press the “[RIGHT] of Cursor buttons” after confirmation.
(The unit is powered off automatically.)



• **Step 7. CONFIRMATION:**
Confirm the display of “PLEASE SET THE CLOCK” in concerned language when the unit is turned on again.
When the unit is connected to PC with USB cable, it is detected as removable media.
(When the “GT” or “GK” model suffix is selected, the display shows “PLEASE SET THE CLOCK” in Chinese.)

1) As for your reference, major default setting condition is as shown in the following table.
• **Default setting (After “INITIAL SETTINGS”)**

	MODEL	VIDEO OUTPUT	LANGUAGE	DATE	REMARKS
a)	DMC-GX1 (Japan domestic model)	NTSC	Japanese	Year/Month/Date	
b)	DMC-GX1PP	NTSC	English	Month/Date/Year	
c)	DMC-GX1PC	NTSC	English	Month/Date/Year	
d)	DMC-GX1EB	PAL	English	Date/Month/Year	
e)	DMC-GX1EC	PAL	English	Date/Month/Year	
f)	DMC-GX1EE	PAL	Russian	Date/Month/Year	
g)	DMC-GX1EF	PAL	French	Date/Month/Year	
h)	DMC-GX1EG	PAL	English	Date/Month/Year	
i)	DMC-GX1GC	PAL	English	Date/Month/Year	
j)	DMC-GX1GD	NTSC	Korean	Year/Month/Date	
k)	DMC-GX1GH	PAL	English	Date/Month/Year	
l)	DMC-GX1GK	PAL	Chinese (simplified)	Year/Month/Date	
m)	DMC-GX1GN	PAL	English	Date/Month/Year	
n)	DMC-GX1GT	NTSC	Chinese (Traditional)	Year/Month/Date	

4 Specifications

Digital Camera Body (DMC-GX1):
Information for your safety

Power Source:	DC 8.4 V
Power Consumption:	2.6 W (When recording with LCD Monitor) [When the Interchangeable lens (H-PS14042) is used] 2.7 W (When recording with LCD Monitor) [When the Interchangeable lens (H-FS014042) is used] 2.4 W (When recording with LCD Monitor) [When the Interchangeable lens (H-H014) is used] 1.6 W (When playing back with LCD Monitor) [When the Interchangeable lens (H-PS14042) is used] 1.7 W (When playing back with LCD Monitor) [When the Interchangeable lens (H-FS014042) is used] 1.4 W (When playing back with LCD Monitor) [When the Interchangeable lens (H-H014) is used]

Camera effective pixels	16,000,000 pixels
Image sensor	4/3″ Live MOS sensor, total pixel number 16,680,000 pixels, Primary colour filter
Digital Zoom	Max. 4×
Extra Tele Conversion (Except for the maximum picture size for each aspect ratio)	ON/OFF simple enlargement (compatible with lenses from other manufacturers)
Focus	Auto Focus/Manual Focus, Face Detection/AF Tracking/23-area-focusing/ 1-area-focusing/Pinpoint (Touch focus area selection possible)
Shutter system	Focal-plane shutter
Burst recording	
Burst speed	20 pictures/second (Super high speed), 4.2 pictures/second (High speed), 3 pictures/second (Middle speed), 2 pictures/second (Low speed)
Number of recordable pictures	9 pictures (when there are RAW files) Depends on the capacity of the card (when there are no RAW files)
ISO sensitivity (Standard Output Sensitivity)	AUTO/ISO160/200/400/800/1600/3200/6400/12800 (1/3 EV step change possible)
Minimum Illumination	Approx. 9 lx (when i-Low light is used, the shutter speed is 1/30th of a second [NTSC areas] / 1/25th of a second [PAL areas]) [When the Interchangeable lens (H-PS14042) is used] Approx. 9 lx (when i-Low light is used, the shutter speed is 1/30th of a second [NTSC areas] / 1/25th of a second [PAL areas]) [When the Interchangeable lens (H-FS014042) is used] Approx. 6 lx (when i-Low light is used, the shutter speed is 1/30th of a second [NTSC areas] / 1/25th of a second [PAL areas]) [When the Interchangeable lens (H-H014) is used]
Shutter speed	B (Bulb) (Max. approx. 120 seconds), 60 seconds to 1/4000th of a second Taking still pictures during motion picture recording Motion picture priorities: 1/30th of a second [NTSC areas] / 1/25th of a second [PAL areas]) of a second to 1/16000th of a second Still picture priorities: B (Bulb) (Max. approx. 120 seconds), 60 seconds to 1/4000th of a second
Metering range	EV 0 to EV 18
White Balance	Auto White Balance/Daylight/Cloudy/Shade/Incandescent lights/Flash/White set1/White set2/White Balance K set
Exposure (AE)	Programme AE (P)/Aperture-priority AE (A)/Shutter-priority AE (S)/Manual exposure (M)/AUTO Exposure Compensation (1/3 EV Step, −5 EV to +5 EV)
Metering Mode	Multiple/Centre weighted/Spot
LCD monitor	3.0″ TFT LCD (3:2) (Approx. 460,000 dots) (field of view ratio about 100%) Touch screen

Flash	Built-in pop up flash GN 7.6 equivalent (ISO160·m) Flash range: Approx. 40 cm (1.32 feet) to 6.8 m (22.4 feet) [When the Interchangeable lens (H-PS14042) is mounted, WIDE, [ISO AUTO] is set] Flash range: Approx. 1.0 m (3.29 feet) to 6.8 m (22.4 feet) [When the Interchangeable lens (H-FS014042) is mounted, WIDE, [ISO AUTO] is set] Flash range: Approx. 50 cm to 9.6 m [When the Interchangeable lens (H-H014) is mounted, [ISO AUTO] is set] AUTO, AUTO/Red-Eye Reduction, Forced ON, Forced ON/Red-Eye Reduction, Slow Sync., Slow Sync./Red-Eye Reduction, Forced OFF
Flash synchronization speed	Equal to or smaller than 1/160th of a second
Microphone	Stereo
Speaker	Monaural
Recording media	SD Memory Card/SDHC Memory Card/SDXC Memory Card
Picture size	
Still picture	When the aspect ratio setting is [4:3] 4592×3448 pixels, 3232×2424 pixels, 2272×1704 pixels When the aspect ratio setting is [3:2] 4576×3056 pixels, 3232×2160 pixels, 2272×1520 pixels When the aspect ratio setting is [16:9] 4576×2576 pixels, 3232×1824 pixels, 1920×1080 pixels When the aspect ratio setting is [1:1] 3424×3424 pixels, 2416×2416 pixels, 1712×1712 pixels
Recording quality	
Motion pictures	[AVCHD] [For NTSC areas] When set to [FSH]: 1920×1080 pixels (60i* recording/ Approx. 17 Mbps)/ When set to [SH]: 1280×720 pixels (60p* recording/ Approx. 17 Mbps) (*Sensor output is 30 frames/sec.) [For PAL areas] When set to [FSH]: 1920×1080 pixels (50i* recording/ Approx. 17 Mbps)/ When set to [SH]: 1280×720 pixels (50p* recording/ Approx. 17 Mbps) (*Sensor output is 25 frames/sec.) [MP4] [For NTSC areas] When set to [FHD]: 1920×1080 pixels (30 frames/sec., Approx. 20 Mbps)/ When set to [HD]: 1280×720 pixels (30 frames/sec., Approx. 10 Mbps)/ When set to [VGA]: 640×480 pixels (30 frames/sec., Approx. 4 Mbps) [For PAL areas] When set to [FHD]: 1920×1080 pixels (25 frames/sec., Approx. 20 Mbps)/ When set to [HD]: 1280×720 pixels (25 frames/sec., Approx. 10 Mbps)/ When set to [VGA]: 640×480 pixels (25 frames/sec., Approx. 4 Mbps)

Quality	RAW/RAW+Fine/RAW+Standard/Fine/Standard/MPO+Fine/MPO+Standard	
Recording file format		
Still Picture	RAW/JPEG (based on “Design rule for Camera File system”, based on “Exif 2.3” standard, DPOF corresponding)/MPO	
Motion pictures	AVCHD/MP4	
Audio compression	AVCHD	Dolby Digital (2 ch)
	MP4	AAC (2 ch)
Interface		
Digital	“USB 2.0” (High Speed)	
Analogue video/audio	[For NTSC areas] NTSC [For PAL areas] NTSC/PAL Composite (Switched by menu) Audio line output (monaural)	
Terminal		
[REMOTE]	φ 2.5 mm jack	
[AV OUT/DIGITAL]	Dedicated jack (8 pin)	
[HDMI]	MiniHDMI TypeC	
Dimensions	Approx. 116.3 mm (W)×67.8 mm (H)×39.4 mm (D) [4.58″ (W)×2.67″(H)×1.55″ (D)] (excluding the projecting parts)	
Mass	Approx. 318 g/0.70 lb [with the card and battery] Approx. 272 g/0.60 lb (camera body) Approx. 413 g/0.91 lb [with the Interchangeable lens (H-PS14042), card and battery] Approx. 483 g/1.06 lb [with the Interchangeable lens (H-FS014042), card and battery] Approx. 373 g/0.82 lb [with the Interchangeable lens (H-H014), card and battery]	
Operating temperature	0 °C to 40 °C (32 °F to 104 °F)	
Operating humidity	10%RH to 80%RH	

Battery Charger:
Information for your safety

Input:	AC～110 V to 240 V, 50/60 Hz, 0.2 A
Output:	DC⎓8.4 V, 0.65 A

Battery Pack (lithium-ion):
Information for your safety

Voltage/capacity:	7.2 V/1010 mAh

Interchangeable Lens (H-PS14042)
“LUMIX G X VARIO PZ 14–42 mm/F3.5–5.6 ASPH./POWER O.I.S.”

Focal length	f=14 mm to 42 mm (35 mm film camera equivalent: 28 mm to 84 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm
Aperture range	F3.5 (Wide) to F5.6 (Tele)
Minimum aperture value	F22
Lens construction	9 elements in 8 groups (4 aspherical lenses, 2 ED Lens)
Nano surface coating	Yes
In focus distance	0.2 m (0.66 feet) (Wide to focal length 20 mm) to ∞ (from the focus distance reference line), 0.3 m (0.99 feet) (focal length 21 mm to Tele) to ∞ (from the focus distance reference line)
Maximum image magnification	0.17× (35 mm film camera equivalent: 0.34×)
Optical Image Stabilizer	Available
[O.I.S.] switch	None (Setting of the [STABILIZER] is done in [REC] menu.)
Mount	“Micro Four Thirds Mount”
Angle of view	75° (Wide) to 29° (Tele)
Filter diameter	37 mm (1.46 inch)
Max. diameter	Approx. 61 mm (2.40 inch)
Overall length	Approx. 26.8 mm (1.06 inch) (from the tip of the lens to the base side of the lens mount when the lens barrel is recessed)
Mass (weight)	Approx. 95 g/0.21 lb

Interchangeable Lens (H-FS014042)
“LUMIX G VARIO 14–42 mm/F3.5–5.6 ASPH./MEGA O.I.S.”

Focal length	f=14 mm to 42 mm (35 mm film camera equivalent: 28 mm to 84 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm
Aperture range	F3.5 (Wide) to F5.6 (Tele)
Minimum aperture value	F22
Lens construction	12 elements in 9 groups (1 aspherical lens)
In focus distance	0.3 m (0.99 feet) to ∞ (from the focus distance reference line)
Maximum image magnification	0.16× (35 mm film camera equivalent: 0.32×)
Optical Image Stabilizer	Available
[O.I.S.] switch	None (Setting of the [STABILIZER] is done in [REC] menu.)
Mount	“Micro Four Thirds Mount”
Angle of view	75° (Wide) to 29° (Tele)
Filter diameter	52 mm (2.05 inch)
Max. diameter	Approx. 60.6 mm (2.39 inch)
Overall length	Approx. 63.6 mm (2.50 inch) (from the tip of the lens to the base side of the lens mount)
Mass (weight)	Approx. 165 g/0.36 lb

Interchangeable Lens (H-H014) “LUMIX G 14 mm/F2.5 ASPH.”

Focal length	f=14 mm (35 mm film camera equivalent: 28 mm)
Aperture type	7 diaphragm blades/circular aperture diaphragm
Aperture range	F2.5
Minimum aperture value	F22
Lens construction	6 elements in 5 groups (3 aspherical lenses)
In focus distance	0.18 m (0.59 feet) to ∞ (from the focus distance reference line)
Maximum image magnification	0.1× (35 mm film camera equivalent: 0.2×)
Optical Image Stabilizer	None
[O.I.S.] switch	None
Mount	“Micro Four Thirds Mount”
Angle of view	75°
Filter diameter	46 mm (1.81 inch)
Max. diameter	Approx. 55.5 mm (2.19 inch)
Overall length	Approx. 20.5 mm (0.81 inch) (from the tip of the lens to the base side of the lens mount)
Mass (weight)	Approx. 55 g/0.12 lb

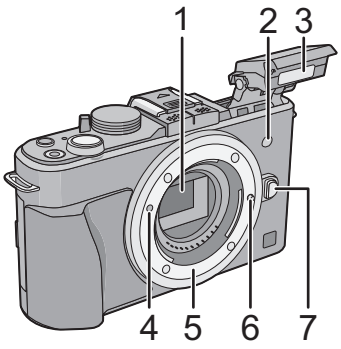
NOTE:(Only for "EB/EC/EF/EG" models)

- Data from the PC can not be written to the camera using the USB connection cable.
- Motion pictures can be recorded continuously for up to 29 minutes 59 seconds.

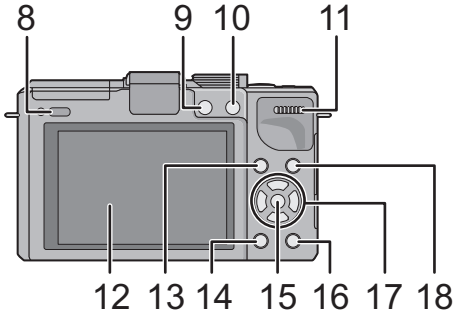
5 Location of Controls and Components

■ Camera body

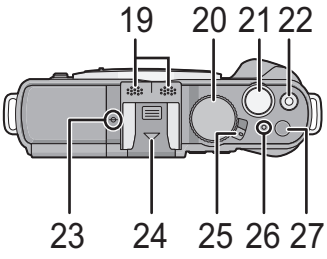
1 Sensor
2 Self-timer indicator/
AF Assist Lamp
3 Flash
4 Lens fitting mark
5 Mount
6 Lens lock pin
7 Lens release button

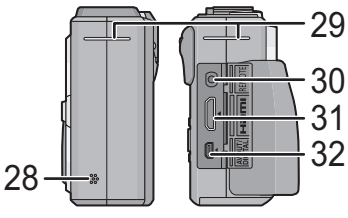


8 Flash open button
9 Playback button
10 [AF/AE LOCK] button/
[Fn2] button
11 Rear dial
12 Touch screen/LCD monitor
13 [Fn1] button
14 [Q.MENU] button/
Delete/Return button
15 [MENU/SET] button
16 [AF/MF] button
17 Cursor buttons
▲/ISO
►/WB (White Balance)
◄/AF Mode button
▼/[DRIVE MODE] button
This button in picture record mode will allow the user to select between the following options.
Single/Burst/Auto bracket/Self-timer
18 [DISP.] button



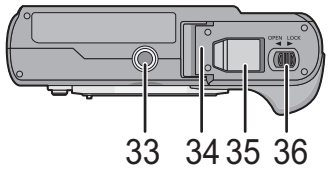
19 Stereo microphone
20 Mode dial
21 Shutter button
22 Motion picture button
23 Focus distance reference mark
24 Hot shoe cover
• Keep the Hot Shoe Cover out of reach of children to prevent swallowing.
25 Camera ON/OFF switch
26 Status indicator
27 Intelligent Auto button
28 Speaker
• Do not cover the speaker with your fingers, etc.
29 Shoulder strap eyelet
• Be sure to attach the shoulder strap when using the camera to ensure that you will not drop it.
30 [REMOTE] socket
31 [HDMI] socket
32 [AV OUT/DIGITAL] socket





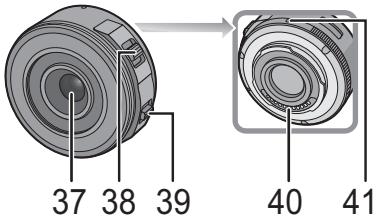
33 Tripod receptacle
34 Card/Battery door
35 DC coupler cover
- When using an AC adaptor, ensure that the Panasonic DC coupler (optional) and AC adaptor (optional) are used.
  Do not attempt to use AC adaptor in other devices.
- Always use a genuine Panasonic AC adaptor (optional).
- It is recommended to use a fully charged battery or AC adaptor when recording motion pictures.
- If while recording motion pictures using the AC adaptor and the power supply is cut off due to a power outage or if the AC adaptor is disconnected etc., the motion picture being recorded will not be recorded.

36 Release lever

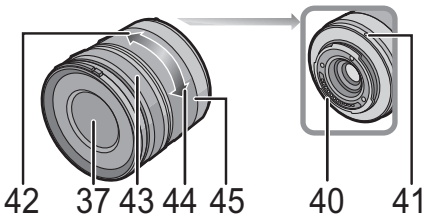


■ Lens

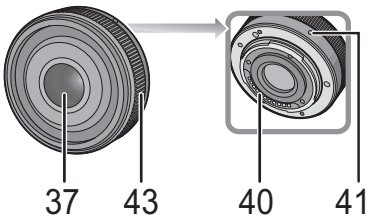
H-PS14042
(LUMIX G X VARIO PZ 14–42 mm/ F3.5–5.6 ASPH./POWER O.I.S.)



H-FS014042
(LUMIX G VARIO 14 – 42 mm/F3.5 – 5.6 ASPH./MEGA O.I.S.)



H-H014
(LUMIX G 14 mm/F2.5 ASPH.)



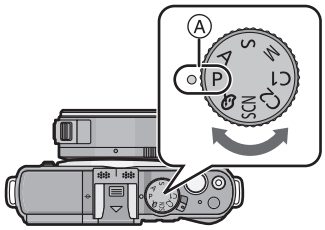
37 Lens surface
38 Zoom lever
39 Focus lever
40 Contact point
41 Lens fitting mark
42 Tele
43 Focus ring
44 Wide
45 Zoom ring

Selecting the Recording Mode

■ To select a Recording Mode with the mode dial

Select the mode by rotating the mode dial.

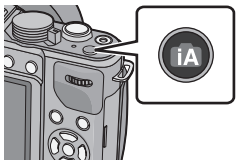
• Rotate the mode dial slowly to select the desired mode Ⓐ.



■ To select Intelligent Auto Mode

Press [iA].

• [iA] button will light up when it is switched to Intelligent Auto Mode.
• The Recording Mode selected by the mode dial is disabled while the [iA] button is lit.



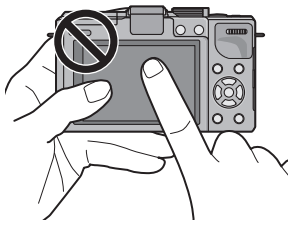
iA	**Intelligent Auto Mode**
The subjects are recorded using settings automatically selected by the camera.	
P	**Programme AE Mode**
The subjects are recorded using your own settings.	
A	**Aperture-Priority AE Mode**
The shutter speed is automatically determined by the aperture value you set.	
S	**Shutter-Priority AE Mode**
The aperture value is automatically determined by the shutter speed you set.	
M	**Manual Exposure Mode**
The exposure is adjusted by the aperture value and the shutter speed which are manually adjusted.	
C1 C2	**Custom Mode**
Use this mode to take pictures with previously registered settings.	
SCN	**Scene Mode**
This allows you to take pictures that match the scene being recorded.	
	Creative Control Mode
Record while checking the image effect.	

Touch Screen

This touch screen is a type that detects pressure.

Touch the screen To touch and release the touch screen.	**Drag** A movement without releasing the touch screen.
 Use this to perform tasks such as selecting icons or images displayed on the touch screen. • When selecting features using the touch screen, be sure to touch the center of the desired icon.	 This is used to move the AF area, operate the slide bar, etc. This can also be used to move to the next image during playback, etc.

Note



- If you use a commercially available liquid crystal protection sheet, please follow the instructions that accompany the sheet. (Some liquid crystal protection sheets may impair visibility or operability.)
- If a commercially available LCD protection sheet is used, **a little extra pressure** may be required if you notice that the touch screen is not responsive.
- Avoid having the hand holding the camera accidently apply pressure to the touch screen. Doing so may affect the touch screen operation.
- Do not press on the LCD monitor with hard pointed tips, such as ball point pens.
- Do not operate with your fingernails.
- Wipe the LCD monitor with dry soft cloth when it gets dirty with finger prints and others.
- Do not scratch or press the LCD monitor too hard.

Taking pictures using the Touch Shutter function

Just by touching the subject to focus, it will focus on the subject and take the picture automatically.

1 **Touch [ ].**

2 **Touch [ ].**

- Icon will change to [ ], and taking a picture with the Touch Shutter function becomes possible.

3 **Touch the subject you wish to focus on, and then take a picture.**

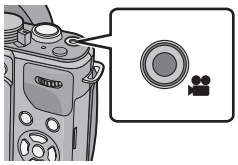
- AF area with same function as [ ] in AF mode is displayed at the position you touch, and picture is taken when it is focused when the AF mode is set to [ ], [ ], [ ], or [ ].

4 **Touch [ ] to cancel the Touch Shutter function.**

Applicable modes: iA P A S M C1 C2 SCN

Recording Motion Pictures

• Screen here is an example of when the Recording Mode is set to [P] (Programme AE Mode).



1 Start recording by pressing the motion picture button.

Ⓐ Elapsed recording time
Ⓑ Available recording time

- Recording of motion picture appropriate for each mode is possible.
- The recording state indicator (red) Ⓒ will flash while recording motion pictures.

2 Stop the recording by pressing the motion picture button again.

Recording still pictures while recording motion pictures

Still pictures can be recorded even while recording a motion picture. (simultaneous recording)

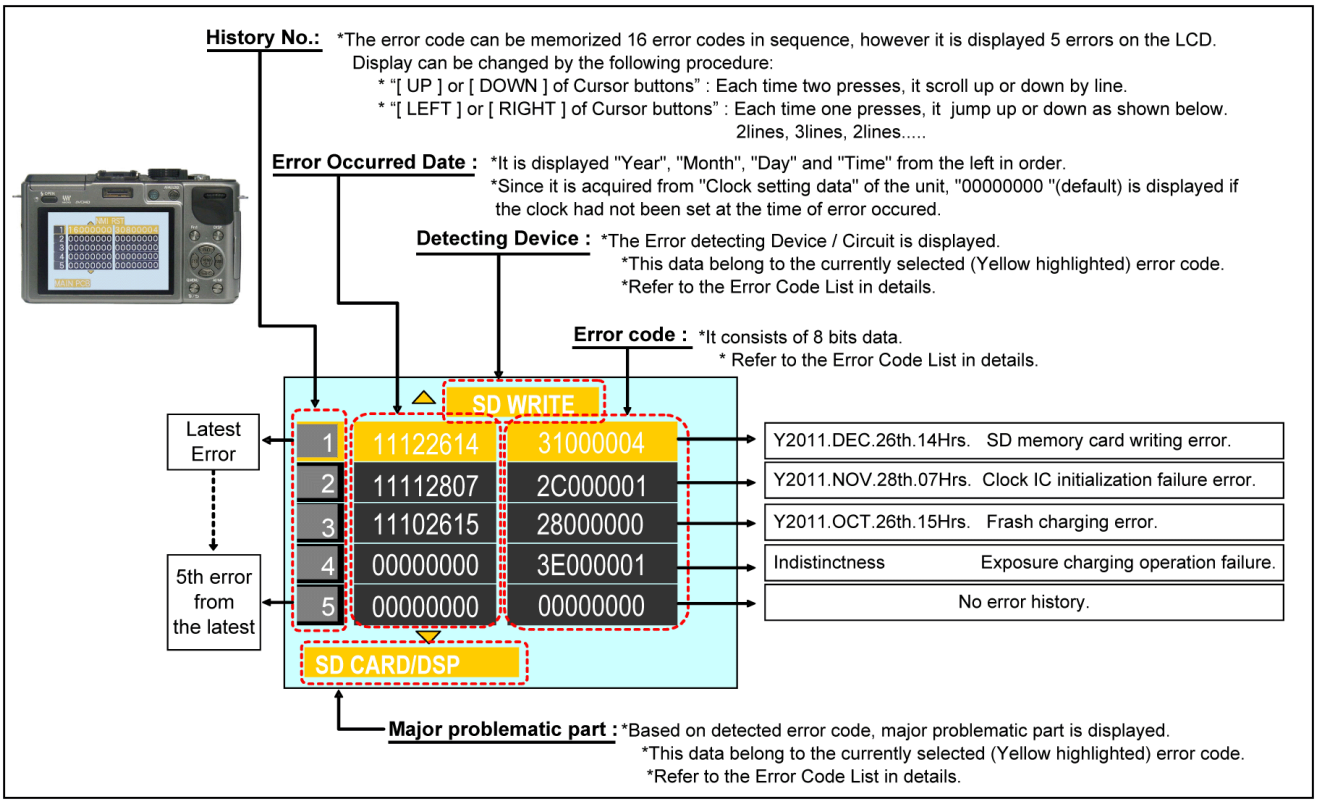
During motion picture recording, press the shutter button fully to record a still picture.

- Simultaneous recording indicator Ⓐ is displayed while recording still pictures.
- You can also take pictures using the Touch Shutter function.

6 Service Mode

6.1. Error Code Memory Function

1. **General description**
   This unit is equipped with history of error code memory function, and can be memorized 16 error codes in sequence from the latest. When the error is occurred more than 16, the oldest error is overwritten in sequence.
   The error code is not memorized when the power supply is shut down forcibly.
   (i.e., when the unit is powered on by the battery, the battery is pulled out)
   The error code is memorized to Flash-ROM when the unit has just before powered off.
2. **How to display**
   The error code can be displayed by ordering the following procedure:
   - **Preparation**
     Attach the fully charged Battery, and insert the SD memory card.
   - **Step 1. The temporary cancellation of "INITIAL SETTINGS":**
     While keep pressing [DISP.], [AF/AE LOCK] and "[RIGHT] of Cursor buttons" simultaneously, turn the Power on.
   - **Step 2. Execute the error code display mode:**
     Press [MENU/SET], "[LEFT] of Cursor buttons" and [AF/AE LOCK] simultaneously with the step 1 condition.
     The display is changed as shown below when the above buttons are pressed simultaneously.
     Normal display → Error code display → Camera information display → Normal display → .....


History No.: *The error code can be memorized 16 error codes in sequence, however it is displayed 5 errors on the LCD.
Display can be changed by the following procedure:
* "[UP] or [DOWN] of Cursor buttons" : Each time two presses, it scroll up or down by line.
* "[LEFT] or [RIGHT] of Cursor buttons" : Each time one presses, it jump up or down as shown below.
2lines, 3lines, 2lines.....
Error Occurred Date : *It is displayed "Year", "Month", "Day" and "Time" from the left in order.
*Since it is acquired from "Clock setting data" of the unit, "00000000 "(default) is displayed if the clock had not been set at the time of error occured.
Detecting Device : *The Error detecting Device / Circuit is displayed.
*This data belong to the currently selected (Yellow highlighted) error code.
*Refer to the Error Code List in details.
Error code : *It consists of 8 bits data.
* Refer to the Error Code List in details.
SD WRITE
Latest Error
5th error from the latest
1 11122614 31000004
2 11112807 2C000001
3 11102615 28000000
4 00000000 3E000001
5 00000000 00000000
Y2011.DEC.26th.14Hrs. SD memory card writing error.
Y2011.NOV.28th.07Hrs. Clock IC initialization failure error.
Y2011.OCT.26th.15Hrs. Frash charging error.
Indistinctness Exposure charging operation failure.
No error history.
SD CARD/DSP
Major problematic part : *Based on detected error code, major problematic part is displayed.
*This data belong to the currently selected (Yellow highlighted) error code.
*Refer to the Error Code List in details.

Example of Error Code Display

• **Error Code List:**

The error code consists of 8 bit data and it shows the following information.

Attribute	Main item	Sub item	Error code		Contents (Upper line)	Error Indication	
			High 4 bits	Low 4 bits		Detecting device	Problematic Part/Circuit
HARD	VENUS A/D	Flash	28*0	0000	Flash charging capacitor did not been fully charged within 20 seconds.	STRB CHG	STRB PCB/FPC
	FLASH ROM	Data Area	2B*0	0001	Flash ROM data reading error is detected when the unit turns ON.	FROM RE	FROM
				0002	Flash ROM data writing error is detected when the unit turns OFF.	FROM WR	FROM
		Program Area		0005	Firmware update error.	(No indication)	(No indication)
	SYSTEM IC	Initialization	2C*0	0001	Clock IC initialization failure error.	SYS INIT	MAIN PCB
SOFT	CPU	Reset	30*0	0001 | 0007	System error (NMI reset).	NMI RST	MAIN PCB
	Recording Media	SD Memory Card	31*0	0001	SD memory card logic error. SD memory card format error. When it is detected, [MEMORY CARD ERROR FORMAT THIS CARD?] is displayed on the screen.	SD CARD	SD CARD/DSP
				0002	SD memory card physical error. During formatting the SD memory card, there is no response from the card. If the mini-SD memory card is used, check the SD memory card adaptor.		SD CARD/DSP
				0004	SD memory card writing error. Check the SD memory card. It might be damage one.	SD WRITE	SD CARD/DSP
	Lens	Communication	3C*0	0001 | 000E	Lens communication error.	(No indication)	(No indication)
	Camera	System	3B*0	0000	Initialization failure error.	INIT	(No indication)
			3E*0	0001	Exposure charging operation failure. (Mount Box Unit)	(No indication)	(No indication)
				0002	Failure of the returning operation to the home position. (Mount Box Unit)		
	Recording	Motion Image Recording	3F*0	0001	File time out error in recording motion image.		
				0002	File data cue send error in recording motion image.		

Important notice about “Error Code List”

About "*" indication:

The third digit from the left is different as follows.

- In case of 0 (example: 2B**0**01000)

  When the third digit from the left shows “0”, this error occurred under the condition of INITIAL SETTINGS has been completed.

  It means that this error is occurred basically at user side.

- In case of 8 (example: 2B**8**01000)

  When the third digit from the left shows "8", this error occurred under the condition of INITIAL SETTINGS has been released.

  (Example; Factory assembling-line before unit shipment, Service mode etc.)

  It means that this error is occurred at service side.

• **Step 3. How to exit from Error Code display mode:**

Simply, turn the power off. (Since Error Code display mode is executed under the condition of temporary cancellation of “INITIAL SETTINGS”, it wake up with normal condition when turn off the power.)

NOTE:

The error code can not be initialized.

7 Troubleshooting Guide

7.1. Checking Method of Body and Interchangeable Lens

1.INITIAL (DEFAULT) STATUS OF THE LENS UNIT

The Lens unit which is supplied as a standard accessory for this camera unit (H-PS14042, H-FS014042, H-H014) shows the following status when the Lens is detached from the Camera unit.

NOTE: Although the lens unit is attached it shows the same condition when the Camera turns off.

H-PS14042 (Included in DMC-GX1X):

[1].ZOOM RING ..... As H-PS14042 is an electric-powered zoom lens, there is no zoom ring.
(The lens barrel is retracted.)

[2].FOCUS RING ..... There is no focus ring.

H-FS014042 (Included in DMC-GX1K and DMC-GX1W):

[1].ZOOM RING ..... When the Zoom ring is rotated, Zoom condition is changing accordingly.
(The 1st lens frame moves.)
[Focal length : 14mm to 42mm [35mm film camera equivalent: 28mm to 84mm]]

[2].FOCUS RING ..... The Focus condition does not changed although Focus ring is rotated. (Free rotation.)

H-H014 (Included in DMC-GX1W):

[1].ZOOM RING ..... As H-H014 is a single focal length lens, there is no zoom ring.
[Focal length : 14mm [35mm film camera equivalent: 28mm]]

[2].FOCUS RING ..... The Focus condition does not changed although Focus ring is rotated. (Free rotation.)

2.INITIAL INSPECTION TIPS (BEFORE DETERMINE THE UNIT BEING FAULTY/DEFECTIVE) :

Since this unit is equipped with various functions/settings, some phenomenon/effect might be caused by miss usage of function and/or settings.

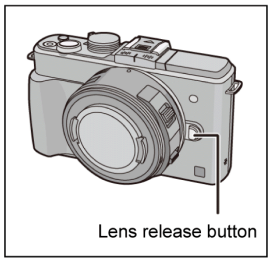
It might be made a miss-judgement caused by miss usage of function & settings although the unit is working properly without fault.

Therefore, check/confirm the followings before concluding/determine the unit being faulty/defective.

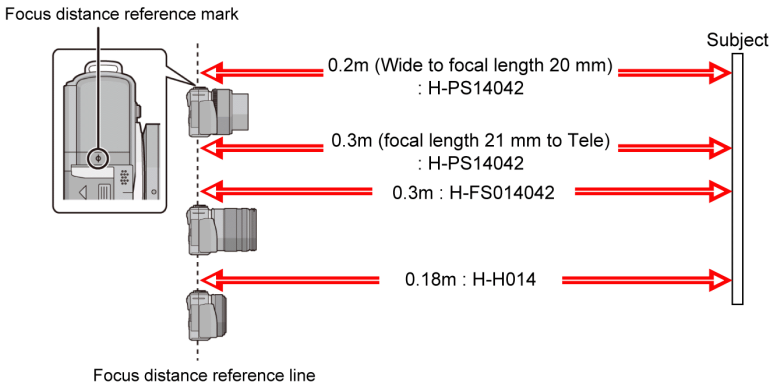
NOTE: Refer to the Operating Instructions carefully.
Also, useful hint/tips for this unit is available at following URL, and is updated frequently.
http://panasonic.jp/support/global/cs/dsc/

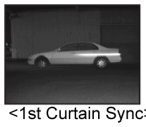
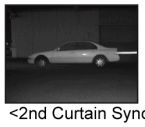
If it is hard to determine whether the resolution is out of specification or not, proceed the **"RESOLUTION INSPECTION",** before replacing the LENS MAIN BLOCK UNIT and/or MOUNT BOX UNIT. (The unit might be mishandling, dropping or others.)

[1]. [LENS RELATIVES]

TITLE	ITEMS	DESCRIPTION
LENS	Aperture size does not changed. (Although aperture value is changed, the physical size of aperture is never changed.)	*Although aperture value is changed, the physical size of aperture is never changed (It keeps the maximum aerture condition) until the shutter release button is fully released. (There is no "aperture stopping down" button. But instead, there are aperture effect preview function and shutter speed effect preview function.) ⇒ [CUSTOM MENU] (1/7) ----- [Fn BUTTON SET] (PREVIEW)
	The Aperture condition does not changed. (Aperture value shows "A0.0")	*The Lens & Body are communicating (serial communication) through mount contacts (11pins)]. *Confirm that lens & body mount contacts are not dirty. *While keep pressing the [Lens release] button, it makes same situation that Lens does not attached. *Although lens is attached to the body, the Aperture value shows "0.0" when the communication error is occurred. Also, when the firmware version confirmation mode is executed, the [- -] is displayed as Lens firmware version. Aperture value is fixed at [0.0] Firmware version shows [LENS FIRMWARE : -.-]  Lens release button
	Although the Focus ring is rotating, it does not change the Focus condition.	*The Focus condition is never changed although focus ring is rotated when the Focus mode is set to AFS or AFC. (When the [AF + MF] is set to [ON], it is able to fine adjust the focus manually by rotating the focus ring while AF lock.) ⇒ [CUSTOM MENU] (3/7) ----- [AF + MF] (ON/OFF)
	No released without lens attachment.	*It is able to release the shutter button without attaching the lens unit. ⇒ [CUSTOM MENU] (7/7) ----- [SHOOT W/O LENS] (ON/OFF)
	The Dusty and/or dirty of the Lens	*Define the location of the dirt / dust of the lens first, whether it is outside surface of the lens or not. If it is outside surface of the lens, order the following procedure in steps. STEP-1. Blow off the dust certainly with Hand Blower. STEP-2. Clean and wipe up the Lens surface by using the Lens cleaning Kit (VFK1900BK). *Refer to the "11 Maintenance" of this manual. **[Wiping up the lens surface]** Like drawing the circle, wipe up the lens surface centre towards to outside slowly.
	It does not become the Shutter speed [B] (Bulb) mode.	*It is only able to select the shutter speed to [B](Bulb) when mode is set to [M] (Manual) and drive mode is set to [SINGLE]. ([B] mode: the shutter stays open while the shutter button is pressed fully (up to about 2 minutes). The shutter closes if you release the shutter button.)

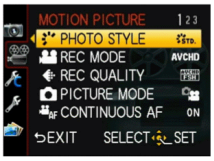
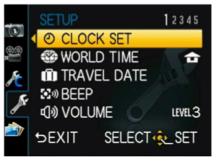
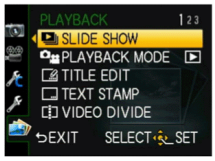
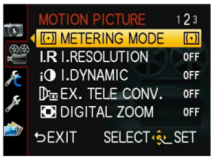
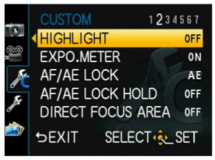
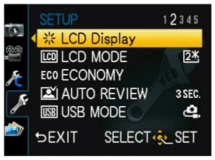
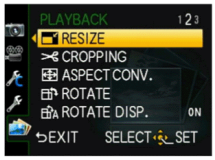
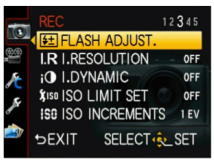
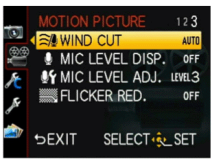
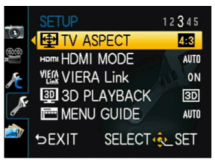
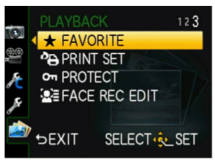
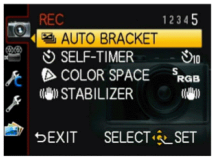
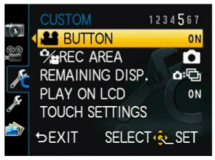
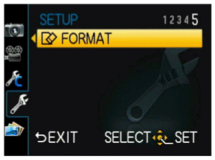
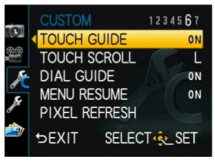
[2]. [BODY RELATIVES]

TITLE	ITEMS	DESCRIPTION
FOCUS	The picture is out of focus although the focus is adjusted in MF mode at once.	*In the following conditions, the focus may be out of focus, no matter the kind of subject. Therefore, adjust the focus again by rotating the Focus ring. *After "in-focus" condition, Zoom condition has been changed. *Power switch is turned OFF and ON again. *After releasing the Power save.
	Focus does not become in focus condition.	*If the shooting distance is less than the Minimum requirement distance for focus, the focus may not be brought into focus, no matter the kind of subject. 
	MF(Manual Focus)ASSIST does not work.	*The MF assist function is that the certain area image is able to enrage 4/5/10 times to make easier to focus. (It can be changed enlarged value by rotating the rear dial or clicking the loupe icons on display.) *It does not activated if the [Focus Mode] is set to other than [MF] mode. *It does not activated when using the Digital Zoom. *It does not activated if [MF ASSIST] is set to OFF. ⇒ [CUSTOM MENU] (3/7) ----- [MF ASSIST] (ON/OFF) (To display the MF assist, press Left cursor button then press [MENU/SET]. Loupe icons
	Face detection does not work.	*Select AF mode to face detection. (In [IA]mode, it is automatically assigned according with scene.) (Press the left side cursor button to display the AF mode menu.) *It does not activated when using the Digital Zoom. *It does not activated if the focus mode is set to MF.
	The subject is not focused properly.	*When get a fingerprint, dirt on the lens surface, resulting in the subject being out of focus. *The subject is beyond the focus range of the camera. *There is camera shake (jitter) or the subject is moving slightly. *The focus indication green mark is lights at the top right hand corner on the LCD when the subject is focused. *The shutter speed will become slower and the optical image stabilizer function may not work properly when taking pictures especially in dark places.
	Focus does not change.	*Focus & Exposure condition is locked when the [AF / AE LOCK] button is pressed under the condition of [AF/AE LOCK HOLD] is "On". ⇒ [CUSTOM MENU] (2/7) ----- [AF/AE LOCK HOLD] (ON/OFF) *It can be reset when [AF / AE LOCK] button is pressed again.
	Although [AF/AE LOCK] button is pressed, it does not hold the Focus, only Exposure is locked.	*Focus does not hold even if [AF/AE LOCK] button is pressed if the [AF/AE LOCK] is selected [AE]. ⇒ [CUSTOM MENU] (2/7) ----- [AF/AE LOCK] (AE, AF, AF/AE) *In the Manual Focus condition, It is only worked as [AE lock] function.
	It does not turn to the "AFC" mode. (Motion prediction does not work.)	*Confirm the setting of the focus mode (AFS / AFC / MF). *Although AFC is effective with burst mode, the focus is fixed on the first picture when subject is dark.
Flash	Some of the Flash setting(s) are not able to select.	*In accordance with the [REC] mode and [FLASH SYNCHRO] mode, selectable flash settings may be differ.
	[AUTO BRACKET] does not work.	*Only one picture can be taken when the Flash is fired.
	The subject is too bright / too dark with Flash.	*Confirm that the picture is taken within Flash range or not. *Confirm that flash output settings. ⇒ [REC] (3/5) ----- [FLASH ADJUST.] (1/3 EV Step, -2EV to +2EV)
	The Flash adjustment does not effect.	*Confirm that the picture is taken within Flash range or not.
	White round spots appear on the recording picture	*If you take a picture with flash in a dark place or indoors, white round spots may be appear on the picture caused by the flash reflecting of particles of dust in air. This is not a malfunction. *A characteristic of this is that the number of round spots and their position differ in every picture.

TITLE	ITEMS	DESCRIPTION
Flash	Colour is strange when the Flash is fired.	*The colour of the subject which is other than Flash reachable distance is not coverage of white balance. *Confirm that [WB Adjustment] setting condition. (Press the cursor [RIGHT] (WB) button, then press the cursor [DOWN]button, in order to execute the [WB ADJUST.] screen. *It also effects to the Flash recording mode as well.
	The appearance of the light source is strange. (The light source appears ahead the subject.)	*Normally, the light source appears ahead the subject. (This is the effect of the 1st curtain synchro.) *The Flash synchro mode can be selected. ⇒ [REC] (2/5) ----- [FLASH SYNCHRO] (1ST / 2ND)   <1st Curtain Sync> <2nd Curtain Sync>
EXPOSURE	The Exposure condition can not be changed	*Focus & Exposure condition is locked when the [AF/AE LOCK] button is pressed under the condition of [AF / AE LOCK HOLD] is "On". ⇒ [CUSTOM MENU] (2/7) ----- [AF / AE LOCK HOLD] (ON/OFF) *It can be reset when [AF/AE LOCK] button is pressed again.
	Although [AF/AE LOCK] button is pressed, only focus is locked. (AE is not locked)	*Focus does not hold even if [AF/AE LOCK] button is pressed if the [AF/AE LOCK] is set to [AF]. ⇒ [CUSTOM MENU] (2/7) ----- [AF/AE LOCK] (AE, AF, AF/AE) *In the Manual Focus condition, It is only worked as [AE lock] function, regardless any settings.
	The pictures recorded with [AUTO BRACKET] function are too dark/bright.	*The [AUTO BRACKET] is selected after setting the [EXPOSURE COMPENSATION], the compensated value is effected for its reference value.
	The Exposure condition is changed extremely.	*Spot metering mode is measuring only the limited narrow area on the centre of the screen. *Confirm the setting condition of [EXPOSURE COMPENSATION] (1/3 EV Step, -3EV to +3EV)
CAPTURING	Although shutter is released, no picture is captured.	*Although the shutter button is fully pressed, it can not take a picture until the subject is not focused. (It is able to take a picture when the Focus Priority turns [OFF] although focus condition does not perfect.) OFF is gives priority to the best time to take a picture. *A picture is not taken until the subject is brought into focus, because [FOCUS PRIORITY] is fixed to [ON] in Intelligent Auto Mode. ⇒ [CUSTOM MENU] (3/7) ----- [FOCUS PRIORITY] (ON/OFF)
	[AUTO BRACKET] does not work.	*Only single picture is able to captured when flash is fired. *It can not be used in My colour mode. *The exposure may not be compensated with auto bracket depending on the brightness of the subject.
COLOUR REPRODUCTION	Colour is strange.	*There is a possibility that [Finely adjusting the white balance] is selected/shifted. *Confirm that [WB Adjustment] setting condition. (Press the cursor [RIGHT] (WB) button, then after choosing the WB mode press the cursor [DOWN] button, in order to execute the [WB ADJUST.] screen.) *It is resumed/memorized although power turns off/on.
	Colour is strange. (With Flash)	*The flash light does not reach enough to the subject due to the over than flash reachable distance. In this case, white balance may be other than its coverage.
	The colour is strange (On PC monitor/ Printout image.)	*There is a possibility that the picture is captured with [AdobeRGB] setting. ⇒ [REC] (5/5) ----- [COLOR SPACE] (sRGB/AdobeRGB) *To proceed proper colour reproduction for AdobeRGB, the AdobeRGB capable PC and Printer are necessary. *In accordance with PC environment, it may not be displayed properly when the picture is re-sized with business software.
POWER	The Power is turned off.	*Confirm that the setting condition of [SLEEP]. (If the camera has not been used for the time selected on the setting, the power turns off automatically.) ⇒ [SETUP] (2/5) ----- [ECONOMY] [SLEEP] (OFF/1MIN./2 MIN./5 MIN./10 MIN.)
DISPLAY	Abnormal Picture Effect. Certain part of the picture is flashing in Black & White.	*Confirm that the setting condition of [HIGHLIGHT]. ⇒ [CUSTOM MENU] (2/7) ----- [HIGH LIGHT] (ON/OFF) The white saturated areas appear blinking in Black and White.
	Firmware version	*Confirm that the firmware versions of the body and lens to be checked. ⇒ [SETUP] (4/5) ----- [VERSION DISP.]

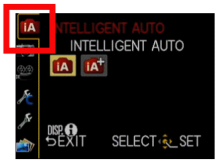
MENU LIST
(Quick Reference)

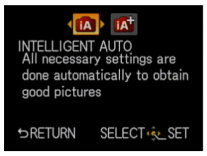
The following menu items are displayed on the LCD monitor.

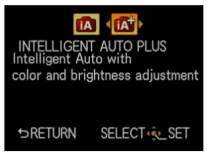
	[REC]	[MOTION PICTURE]	[CUSTOM MENU]	[SETUP]	[PLAYBACK]
1st Page					
2st Page					
3st Page					
4st Page					
5st Page					
6st Page					
7st Page					

REMARKS:

*When pressing the [iA] button and having been illuminated the button, extra-menu groups are displayed.
[Intelligent Auto Mode] or [Intelligent Auto Plus Mode] can be selected.

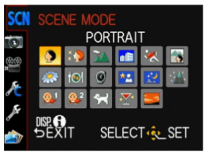






*When the [Intelligent Auto Mode] or [Intelligent Auto Plus Mode], as for [REC], [MOTION PICTURE] and [CUSTOM MENU], only the basic item can be selected. (Items not selected are greyed out.)

*When the mode dial is set to [Creative Control Mode], [Scene Mode(SCN)] and [Custom Mode (C2)], extra-menu groups are displayed.



NOTE:

*When set [MENU RESUME] in the [CUSTOM MENU] menu to [ON], the screen shows the last selected menu item when the camera is turned off.
⇒ [CUSTOM MENU] (6/7) ----- [MENU RESUME] (ON/OFF)

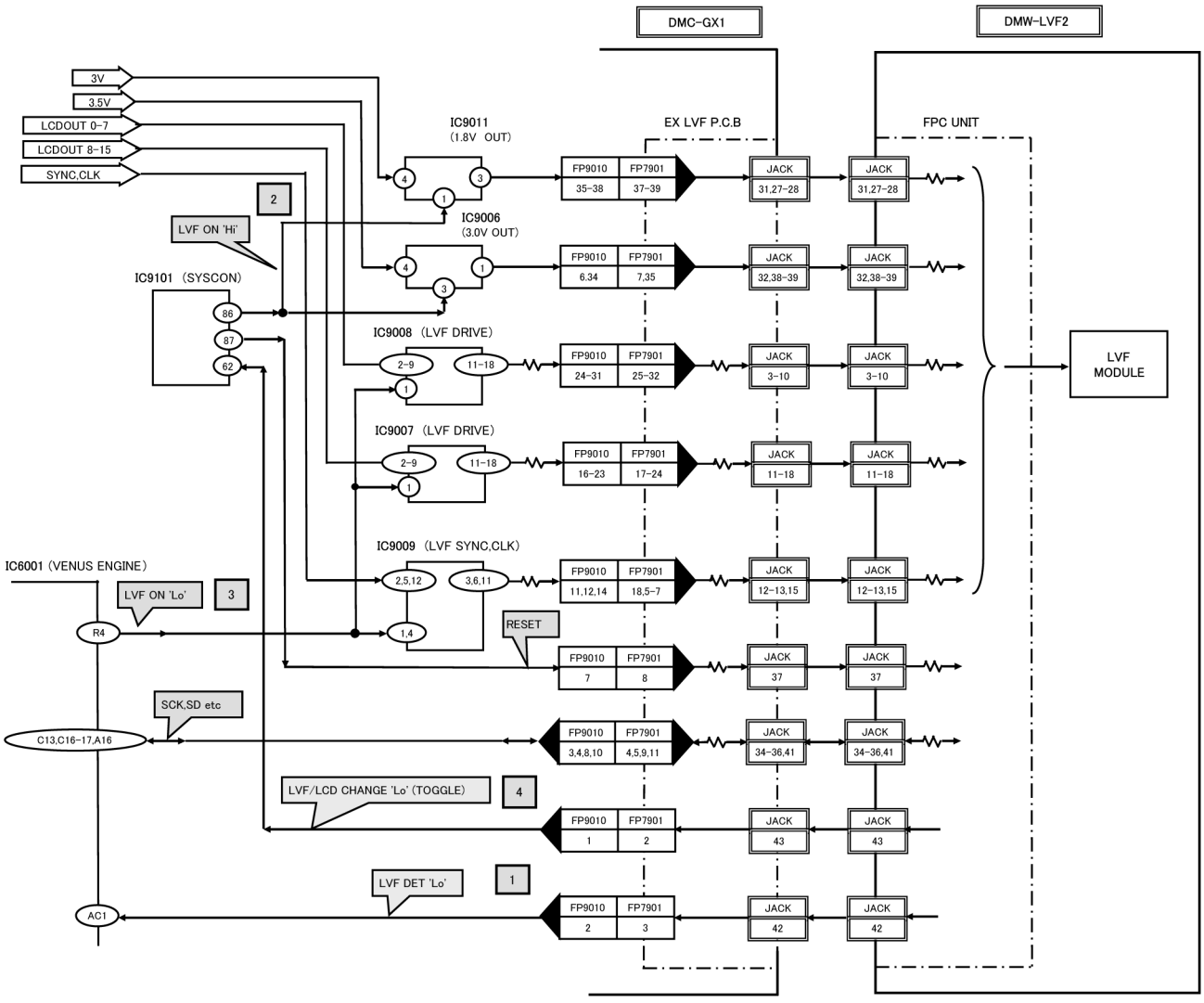
7.2. Checking Method of Drive Circuit

• It is a circuit operation and a check method when optional external live viewfinder (DMW-LVF2) is attached.

[Circuit Operation]

• When DMW-LVF2 is attached, DMC-GX1 supplies the power source and various signals to DMW-LVF2.

1. When DMW-LVF2 is attached, Pin 2 of FP9010 becomes 'Lo' (GND), then IC6001 (VENUS ENGINE) detects the installation. -------- [1]
2. Pin 86 of IC9101 (SYSCON) becomes 'Hi' at DMW-LVF2 display mode, 1.8V is outputted from pin 3 of IC9011 and 3V is outputted from pin 1 of IC9006. -------- [2]
3. Pin R4 of IC6001 becomes 'Lo', and various signals are output from IC9007 - IC9009 to DMW-LVF2. -------- [3]
4. The display changes whenever the [LVF/LCD] switch button of DMW-LVF2 is pressed. -------- [4]
   * As for the switch with the [LVF/LCD] button, the power supply of DMC-GX1 of turning off is maintained.

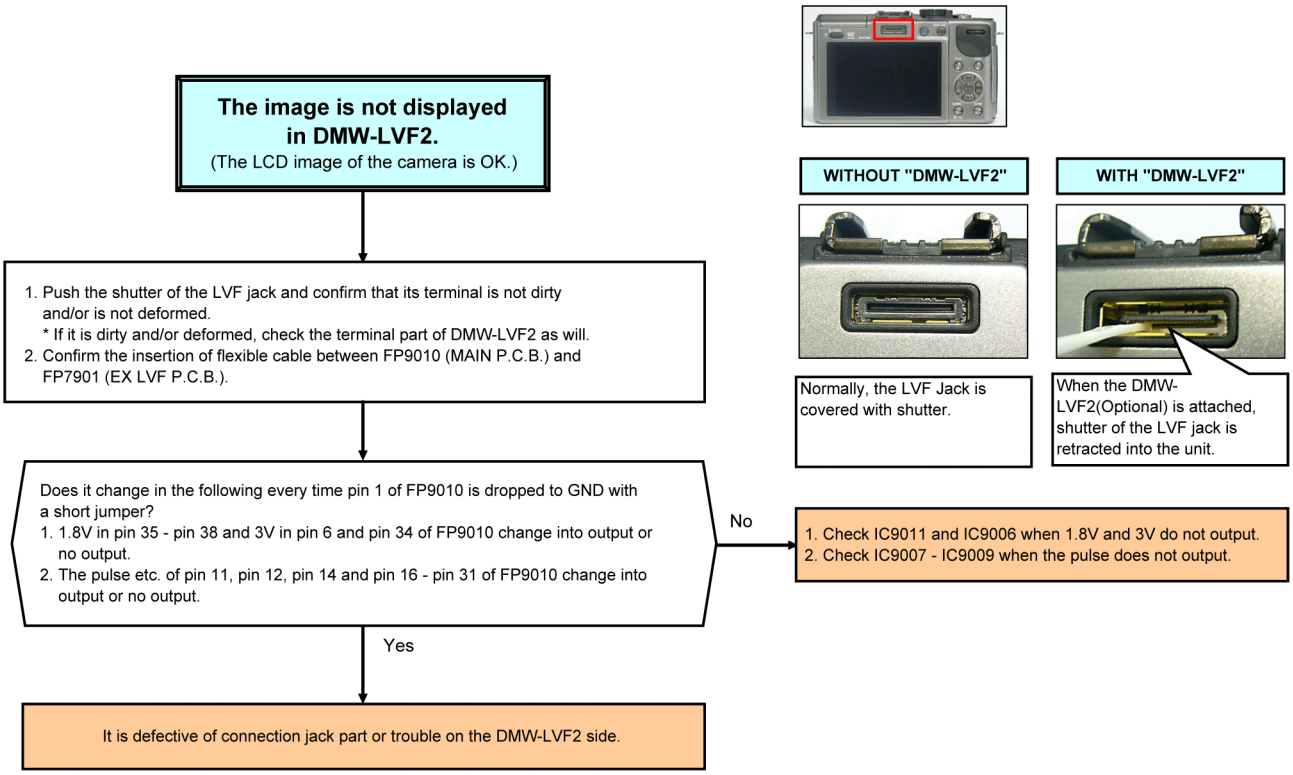


[Check Flow]

• Preparation:

When there is no DMW-LVF2, connect pin 2 of FP9010 to GND with a short jumper, and make the circuit operation simulate when DMW-LVF2 was attached.

When there is DMW-LVF2, attach the DMW-LVF2 to DMC-GX1 and check the circuit.

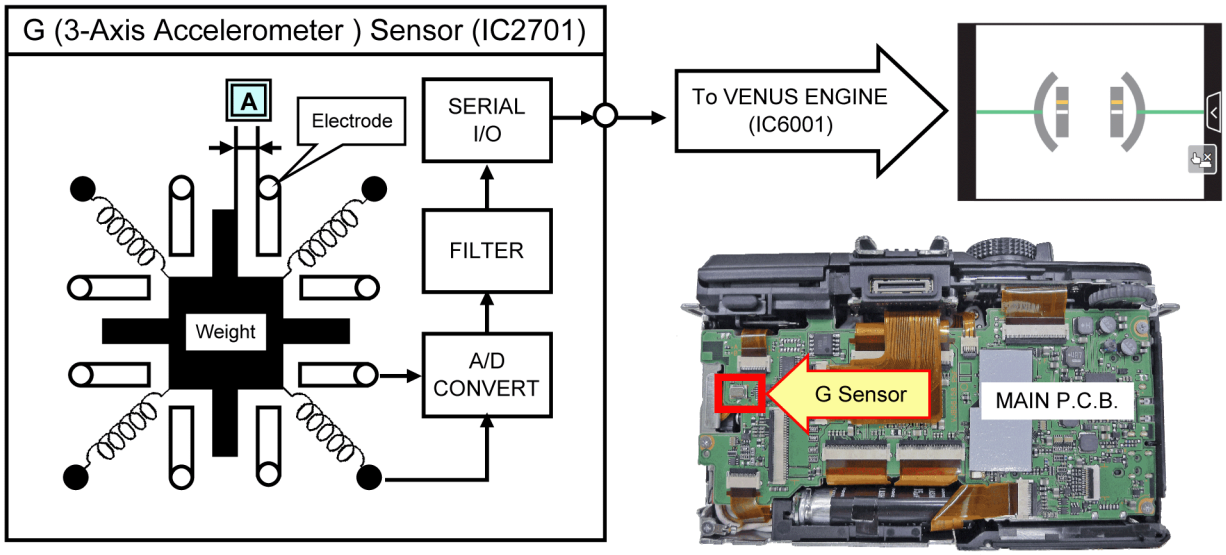

The image is not displayed in DMW-LVF2.
(The LCD image of the camera is OK.)
1. Push the shutter of the LVF jack and confirm that its terminal is not dirty and/or is not deformed.
* If it is dirty and/or deformed, check the terminal part of DMW-LVF2 as will.
2. Confirm the insertion of flexible cable between FP9010 (MAIN P.C.B.) and FP7901 (EX LVF P.C.B.).
Does it change in the following every time pin 1 of FP9010 is dropped to GND with a short jumper?
1. 1.8V in pin 35 - pin 38 and 3V in pin 6 and pin 34 of FP9010 change into output or no output.
2. The pulse etc. of pin 11, pin 12, pin 14 and pin 16 - pin 31 of FP9010 change into output or no output.
No
1. Check IC9011 and IC9006 when 1.8V and 3V do not output.
2. Check IC9007 - IC9009 when the pulse does not output.
Yes
It is defective of connection jack part or trouble on the DMW-LVF2 side.
WITHOUT "DMW-LVF2"
WITH "DMW-LVF2"
Normally, the LVF Jack is covered with shutter.
When the DMW-LVF2(Optional) is attached, shutter of the LVF jack is retracted into the unit.

7.3. About Electronic Level

The unit has the electronic level function using G (3-axis accelerometer) sensor inside the unit.

[Principal of Operation]

1. Movement of "Weight" is detected by capacitance. -------- [A]
2. Each acceleration of the X/Y/Z axis is converted into data and they are output.
3. The VENUS ENGINE converts the data into a horizontal angle and an angle of inclination, and displays them to screen.



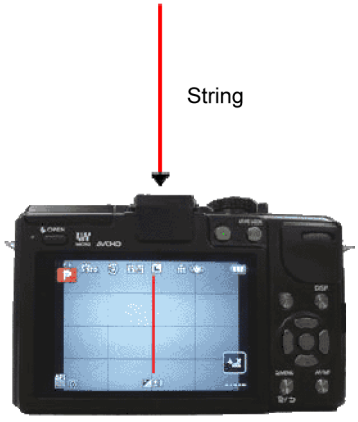
[Purpose of the adjustment]

• Correct the camera as the horizontal angle and an angle of inclination become within ±1 degree for a live-view picture.

1. When the mount box unit or IC6002 (or Main P.C.B.) is replaced, readjustment is necessary.
2. When the mount box unit, Main P.C.B. or the exterior of the camera is replaced, please confirm following;

   a. Switch to display the Guidelines in LCD.
   b. Confirm that the vertical lines in LCD are parallel with string hanging down perpendicularly.
      If they are significantly shifted, readjustment is necessary.

• Refer to the adjustment software for procedure of adjustment.
No special fixture is required. The adjustment can be performed with a table as possible horizontal, the string which hanging down perpendicularly and a general-purpose tripod.

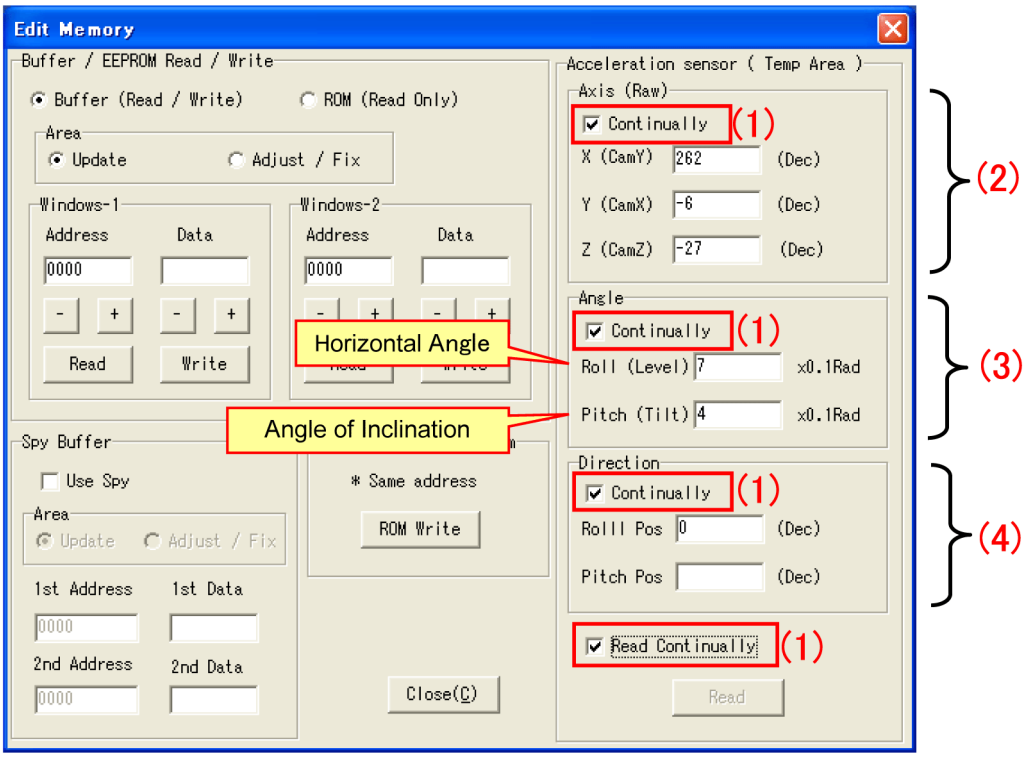


[Test of the G-Sensor working]

- G-Sensor working can be confirmed by G-Sensor data change on the "Edit Memory".

[Operation]

(1)-----When you acquire the data of the G-sensor continually, put a checkmark here.
(2)-----Raw data of G- sensor is displayed.
(3)-----Roll angle (Horizontal Level) and Pitch angle (Tilt) are displayed.
(4)-----A posture state of the camera is displayed.



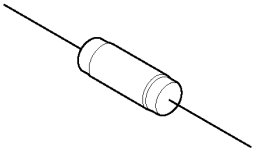
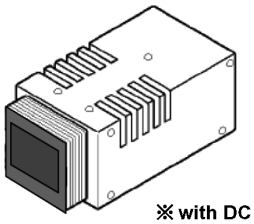
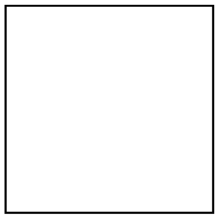
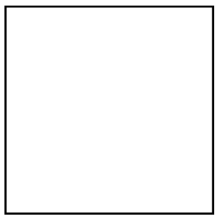
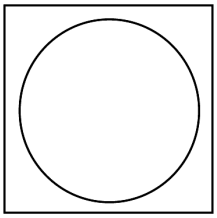
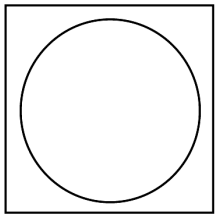
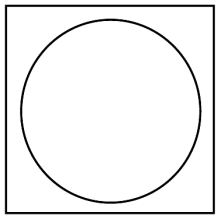
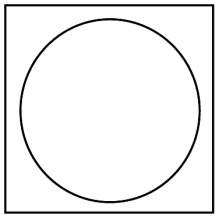
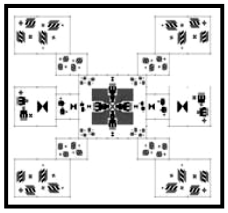
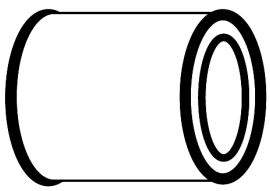
[Confirmation]

1. Put a checkmark in four portions of marked (1) each.
2. Move the camera and confirm the change of each data of (2) and (3).
   Above value is one example. The value changes according to dispersion of each G-sensor.
3. When the value (3) is matched with the posture of the camera, G-sensor itself is normal.
   If they are significantly different, G-sensor may be defective.

8 Service Fixture & Tools

8.1. Service Fixture and Tools

The following Service Fixture and tools are used for checking and servicing this unit.

Resistor for Discharging ERG5SJ102	**LIGHT BOX** **RFKZ0523**	ND FILTER 1 VFK1164ND09
 **An equivalent type of Resistor may be used.**	 **※ with DC Cable** *** VFK1164TDVLB can be used.**	
ND FILTER 2 RFKZ0513	CC FILTER 1 RFKZ0511	CC FILTER 2 RFKZ0512
		
LB FILTER 1 RFKZ0520	LB FILTER 2 RFKZ0521	TOUCH PEN VGQ0C14
		 VYQ4370 can be used.
RESOLUTION CHART RFKZ0510	DRIVER VFK1390	TORQUE DRIVER RFKZ0456
 ※Supplied as divided chart parts. (Assemble it before use.)		 Spec.:2-30cN・m (Equiv.0.2-3kgf/cm)
DMC-G1K Set	Lens Cleaning Kit (BK) VFK1900BK	NAME RING FIXTURE RFKZ0507
*Correspond by the marketed commodity. (It does not supply as service fixture and tools.) 	 *** Only supplied as 10 set/box.**	

About Name Ring Fixture:

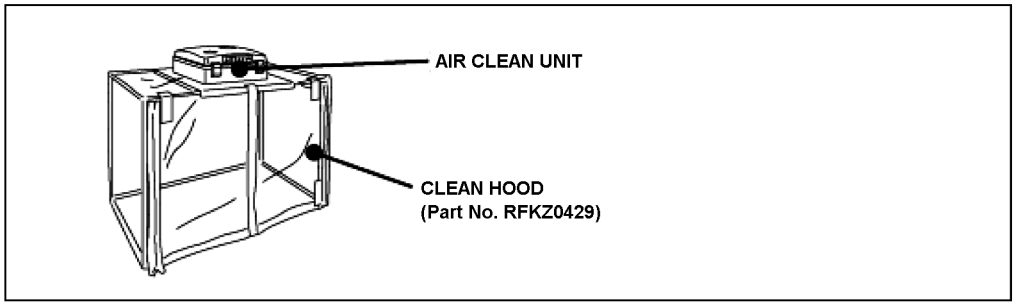
- RFKZ0507 for H-FS014042

8.2. Clean Box

- The repair quality is considered, and it is recommended working in the environment of satisfied clean level less than class 10,000 (Federal Standard 209D).
  (When remove the hood adaptor and 1st lens frame, it is indispensable.)

[NOTE]

- Work in the environment of satisfied clean level less than class 10,000 (Federal Standard 209D) when remove the hood adaptor and 1st lens frame for cleaning.
  *Refer to "11.2. General description (Interchangeable Lens/H-PS14042)", "11.3. General description (Lens cleaning: Interchangeable Lens/H-FS014042)", "11.4. General description (Lens cleaning: Interchangeable Lens/H-H014)" section of this service manual for details.

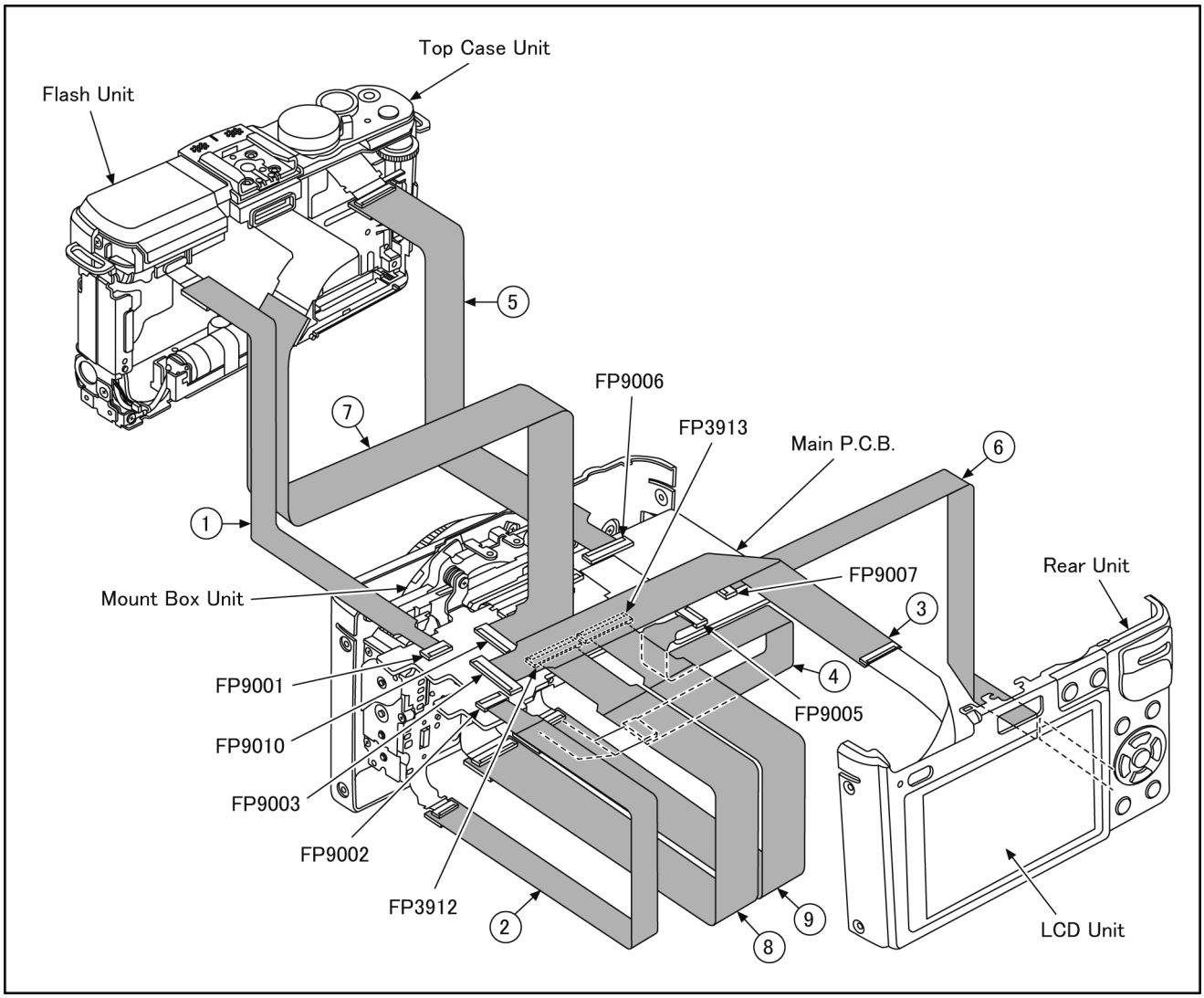


8.3. Service Position

This Service Position is used for checking and replacing parts. Use the following Extension cables for servicing.

Table S1 Extension Cable List

No.	Parts No.	Connection	Form
1	RFKZ0583	FP9001(MAIN) <=> FT7801(MAIN-FLASH FPC) - FLASH P.C.B.	19pin 0.3 FFC
2	RFKZ0583	FP9002(MAIN) <=> MOUNT BOX UNIT(SHUTTER I/F)	19pin 0.3 FFC
3	VFK2024	FP9003(MAIN) <=> LCD UNIT	51PIN 0.3 FFC
4	RFKZ0564	FP9005(MAIN) <=> MOUNT BOX UNIT(LENS I/F)	23pin 0.3 FFC
5	RFKZ0477	FP9006(MAIN) <=> FT7701(MAIN-TOP FPC) - TOP P.C.B.	45pin 0.3 FFC
6	VFK1582A1225	FP9007(MAIN) <=> LCD UNIT	12pin 0.5 FFC
7	RFKZ0416	FP9010(MAIN) <=> FT7841(MAIN-LVF FPC) - EXT LVF P.C.B.	41pin 0.3 FFC
8	RFKZ0477	FP3912(MAIN) <=> MOUNT BOX UNIT	45pin 0.3 FFC
9	RFKZ0477	FP3913(MAIN) <=> MOUNT BOX UNIT	45pin 0.3 FFC



CAUTION-1. (When servicing CAPACITOR P.C.B. UNIT)

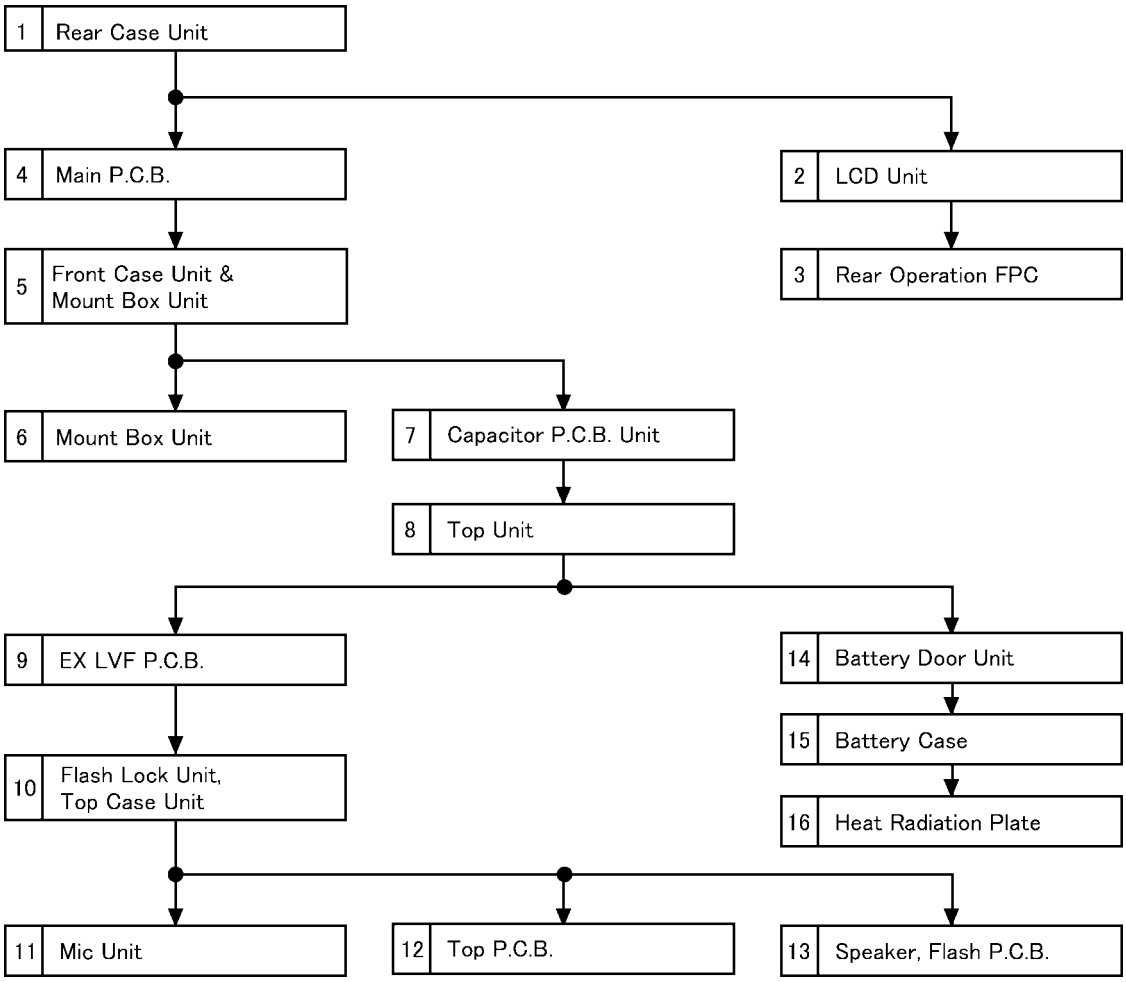
1. Be sure to discharge the E.capacitor on CAPACITOR P.C.B. UNIT.
   Refer to “HOW TO DISCHARGE THE E.CAPACITOR ON CAPACITOR P.C.B. UNIT”.
   The capacitor voltage is not lowered soon even if the AC Cord is unplugged or the battery is removed.
2. Be careful of the high voltage circuit on CAPACITOR P.C.B. UNIT.
3. DO NOT allow other parts to touch the high voltage circuit on CAPACITOR P.C.B. UNIT.

9 Disassembly and Assembly Instructions

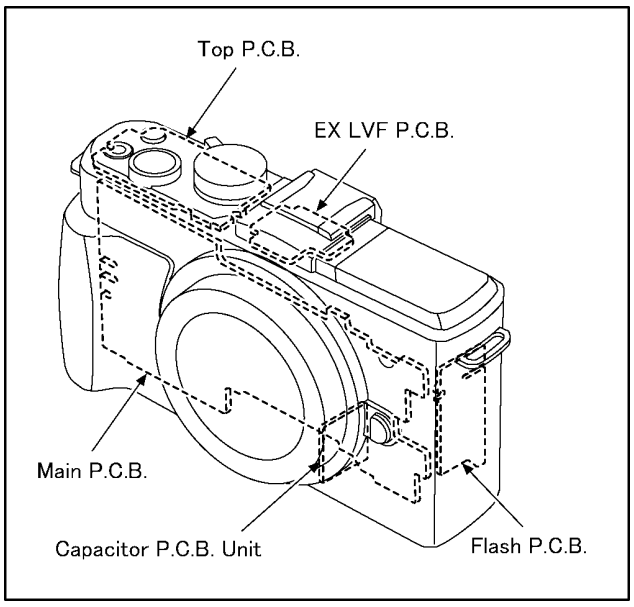
9.1. Camera Body Part

9.1.1. Disassembly Flow Chart

This is a disassembling chart.
When assembling, perform this chart conversely.


1 Rear Case Unit
4 Main P.C.B.
2 LCD Unit
5 Front Case Unit & Mount Box Unit
3 Rear Operation FPC
6 Mount Box Unit
7 Capacitor P.C.B. Unit
8 Top Unit
9 EX LVF P.C.B.
14 Battery Door Unit
15 Battery Case
10 Flash Lock Unit, Top Case Unit
16 Heat Radiation Plate
11 Mic Unit
12 Top P.C.B.
13 Speaker, Flash P.C.B.

9.1.2. P.C.B. Location



9.1.3. Disassembly Procedure

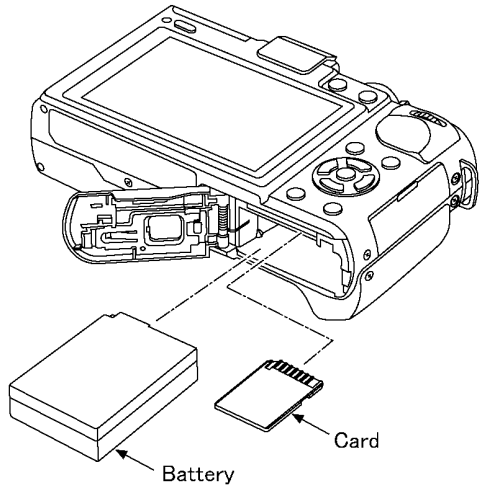
No.	Item	Fig	Removal
1	Rear Case Unit	(Fig. D1)	Shoe Cover
			Shoe Spring
		(Fig. D2)	2 Screws (A)
			6 Screws (B)
		(Fig. D3)	FP9003 (Flex)
			FP9007 (Flex)
			Rear Case Unit
2	LCD Unit	(Fig. D4)	1 Screw (C)
			Grip Piece Rear
		(Fig. D5)	1 Screw (D)
			2 LCD FPC Tapes B
			2 Locking tabs (A)
			2 Locking tabs (B)
			Rear Operation FPC & Rear LCD Plate
			LCD Unit
3	Rear Operation FPC	(Fig. D6)	Rear LCD Plate
			Rear Operation FPC
4	Main P.C.B.	(Fig. D7)	FP9010 (Flex)
			FP3911 (Flex)
			FP3912 (Flex)
			FP3913 (Flex)
			FP9001 (Flex)
			FP9002 (Flex)
			FP9004 (Flex)
			FP9005 (Flex)
			FP9006 (Flex)
			3 Screws (E)
			1 Hooking part
			P9001 (Connector)
			Main P.C.B.
5	Front Case Unit & Mount Box Unit	(Fig. D8)	5 Screws (F)
			1 Screw (G)
			2 Screws (H)
			Front Case Unit & Mount Box Unit
		(Fig. D9)	Note: (When Installing)
6	Mount Box Unit	(Fig. D10)	3 Screws (I)
			Mount Box Unit
		(Fig. D11)	Handling Precautions of Mount Box Unit
7	Capacitor P.C.B. Unit	(Fig. D12)	1 Screw (J)
			1 Screw (K)
			Tripod Fixing Plate
		(Fig. D13)	Capacitor Tape
			1 Locking tab
			Capacitor P.C.B. Unit
8	Top Unit	(Fig. D14)	1 Screw (L)
			1 Locking tab
			Top Unit
9	EX LVF P.C.B.	(Fig. D15)	2 Screws (M)
			EX LVF P.C.B.
10	Flash Lock Unit Top Case Unit	(Fig. D16)	1 Screw (N)
			Shoe Plate
			2 Screws (O)
			3 Convex portions
			Flash Lock Unit
			Top Case Unit
11	Mic Unit	(Fig. D17)	FP8005 (Flex)
			2 Ribs
			Mic Cushion (C)
			Mic Unit
			Mic Cushion (B)
			Mic Cushion (A)
12	Top P.C.B.	(Fig. D18)	2 Screws (P)
			FP8004 (Flex)
			Rear Dial Switch Unit
		(Fig. D19)	1 Screw (Q)
			FP8002 (Flex)
			FP8003 (Flex)
			Top P.C.B.
13	Speaker Flash P.C.B.	(Fig. D20)	1 Screw (R)
			1 Screw (S)
			Speaker
			1 Screw (T)
			Side Plate (R)
			Strap Holder
			1 Screw (U)
			2 Solders
			P8502 (Connector)
			Flash P.C.B.
14	Battery Door Unit	(Fig. D21)	Battery Door Shaft
			Battery Door Spring
			Battery Door Unit
15	Battery Case	(Fig. D22)	2 Locking tabs
			Jack Door
			4 Locking tabs
			Battery Case
			Battery Out Spring
			Battery Lock Knob
			Battery Lock Spring
16	Heat Radiation Plate	(Fig. D23)	1 Locking tab
			2 Convex portions
			Heat Radiation Plate

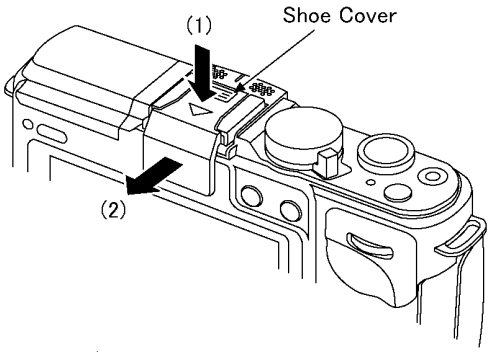
9.1.3.1. Removal of the Rear Case Unit

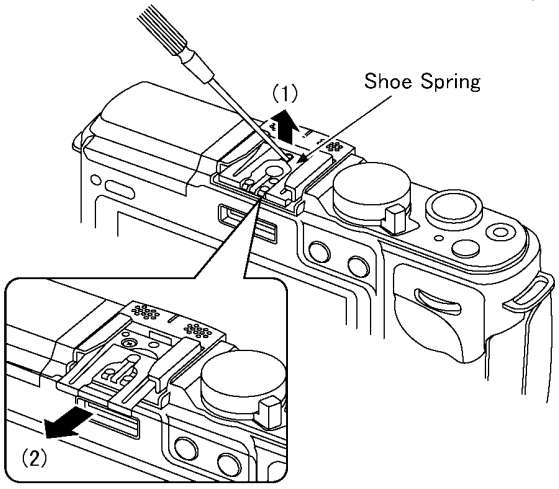
NOTE:

- When servicing and reassembling, remove the card and battery from the unit.

・Card ・Shoe Cover
・Battery ・Shoe Spring

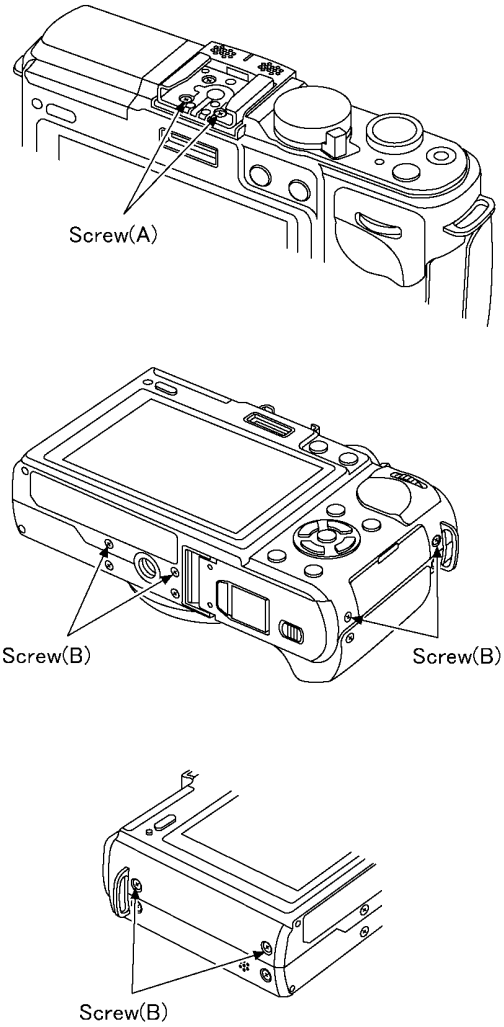






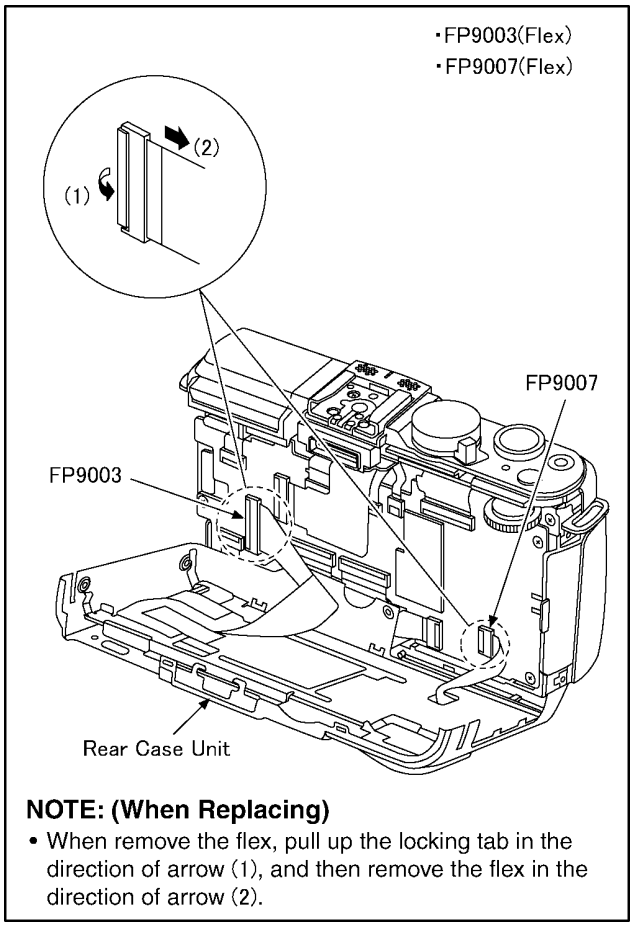
(Fig. D1)

・Screw(A) × 2
・Screw(B) × 6



Screw(A)	Screw(B)
5.3mm BLACK	2.5mm Ⓢ:SILVER Ⓚ:BLACK

(Fig. D2)

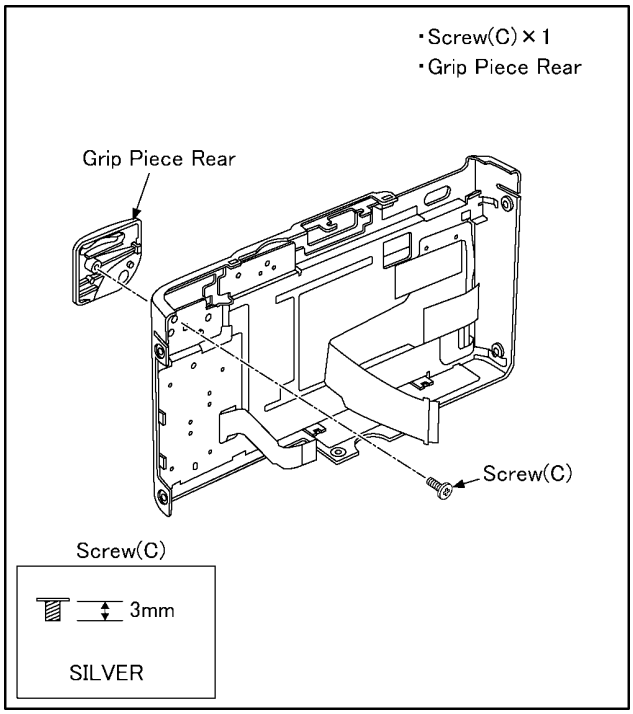


NOTE: (When Replacing)

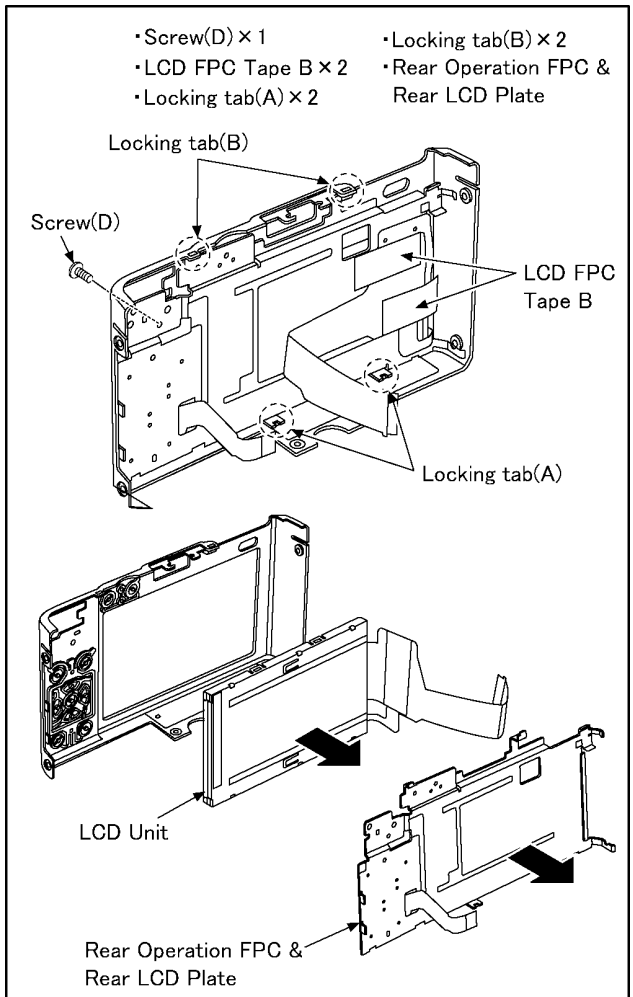
- When remove the flex, pull up the locking tab in the direction of arrow (1), and then remove the flex in the direction of arrow (2).

(Fig. D3)

9.1.3.2. Removal of the LCD Unit



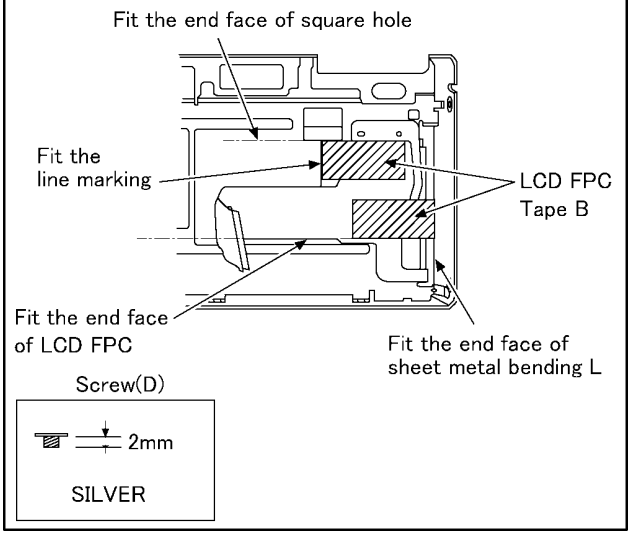
(Fig. D4)



NOTE: (When Replacing)

- Peel off the 2 LCD FPC tape B, and then remove the LCD flex.
- Remove the locking tab (B) after removing the locking tab (A), and then remove the rear operation FPC & LCD plate.
  (When installing, insert first the locking tab (B) then the locking tab (A))
- Take care not to fingerprints on the surface of the LCD.
- Take care not to damage the flex.

■Paste the LCD FPC tape B


Fit the end face of square hole
Fit the line marking
LCD FPC Tape B
Fit the end face of LCD FPC
Fit the end face of sheet metal bending L
Screw(D)
2mm
SILVER

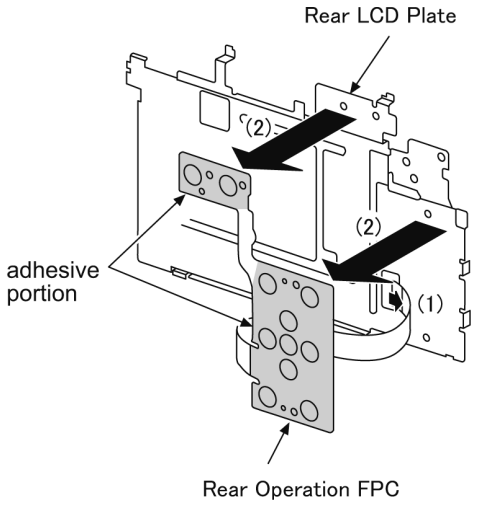
(Fig. D5)

9.1.3.3. Removal of the Rear Operation FPC

・Rear LCD Plate

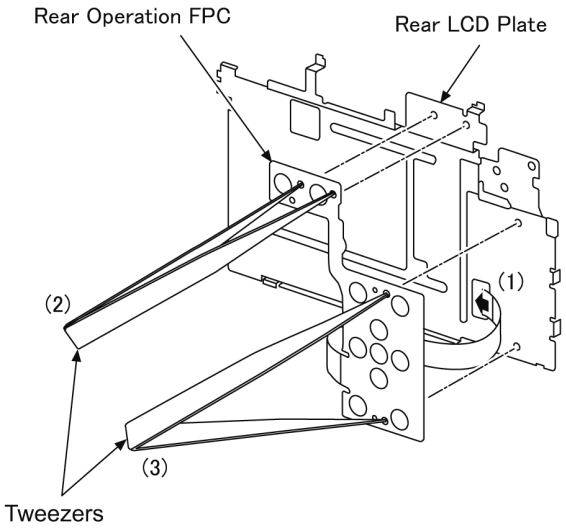
■NOTE: (When Replacing)

1. Remove the end of the flex of rear operation FPC from the hole of the rear LCD plate.
2. Peel the adhesive portion of the rear operation FPC in two locations carefully, and then remove the rear operation FPC.



■Paste the Rear Operation FPC

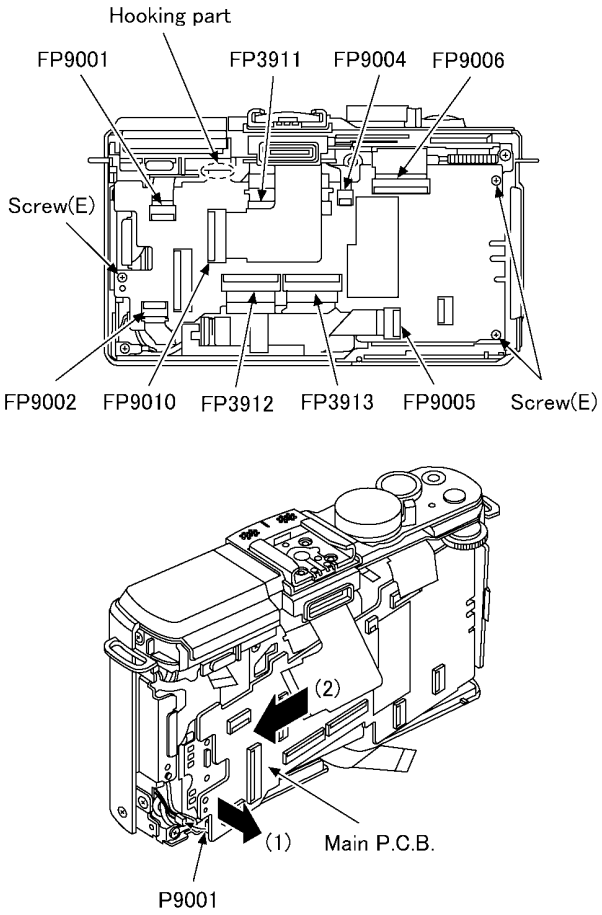
1. Through the end of the rear operation FPC to holes of the rear LCD plate.
2. Set the tip of the tweezers to the upper side positioning holes of the rear operation FPC, and then affixed to holes of the rear LCD plate.
3. Set the tip of the tweezers to the lower side positioning holes of the rear operation FPC, and then affixed to holes of the rear LCD plate.



(Fig. D6)

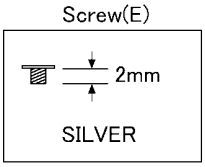
9.1.3.4. Removal of the Main P.C.B.

・FP9010(Flex) ・FP9001(Flex) ・FP9006(Flex)
・FP3911(Flex) ・FP9002(Flex) ・Screw(E) × 3
・FP3912(Flex) ・FP9004(Flex) ・Hooking part × 1
・FP3913(Flex) ・FP9005(Flex) ・P9001(Connector)



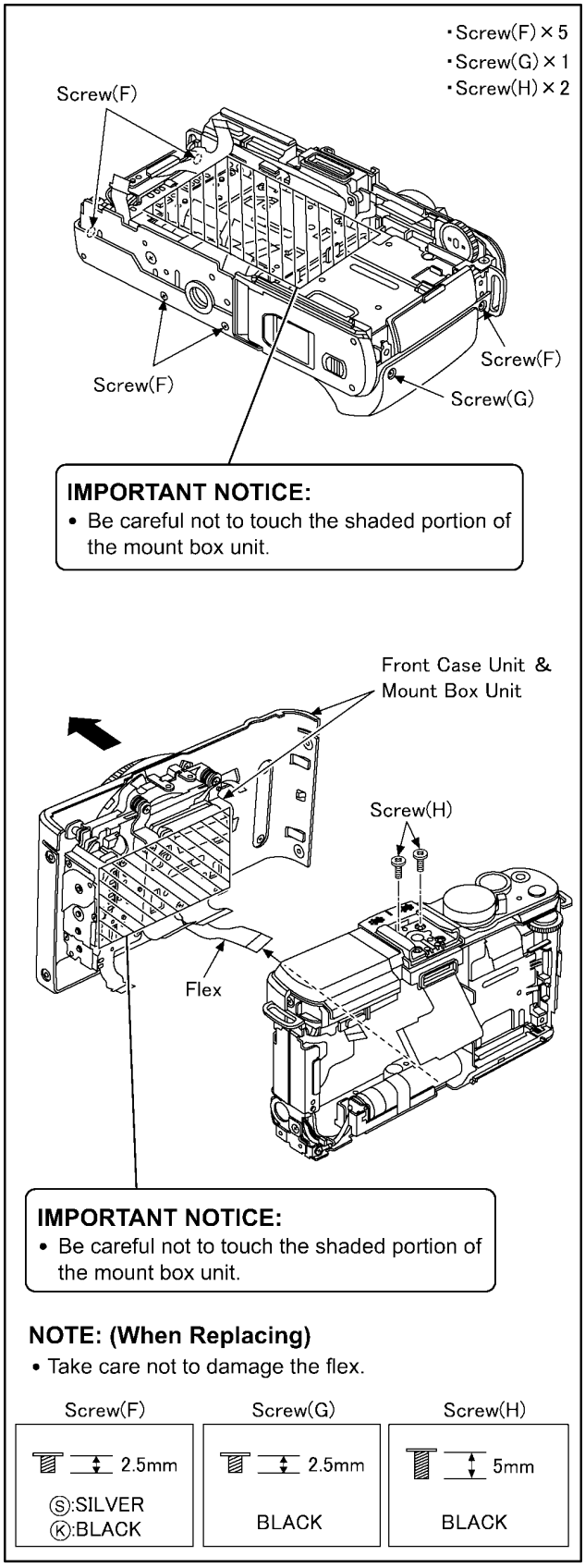
NOTE: (When Replacing)

- Remove the main P.C.B. in the direction of arrow (1), remove the connector (P9001), and then remove main P.C.B. in the direction of arrow (2).

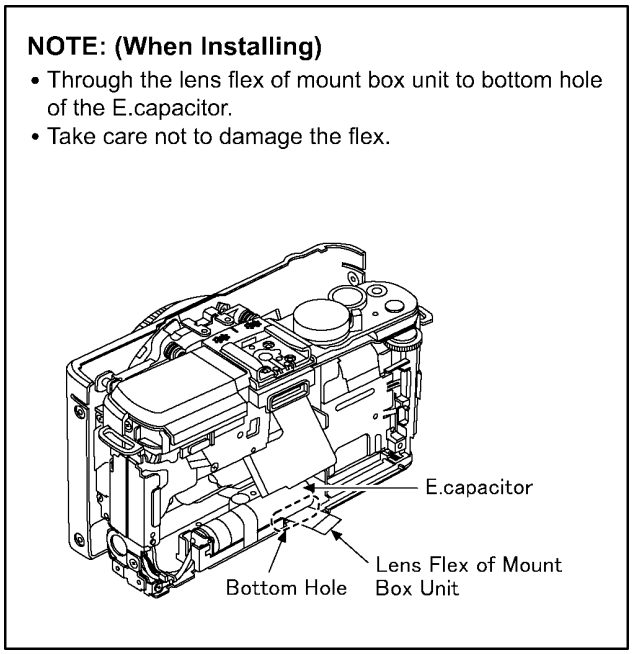


(Fig. D7)

9.1.3.5. Removal of the Front Case Unit & Mount Box Unit

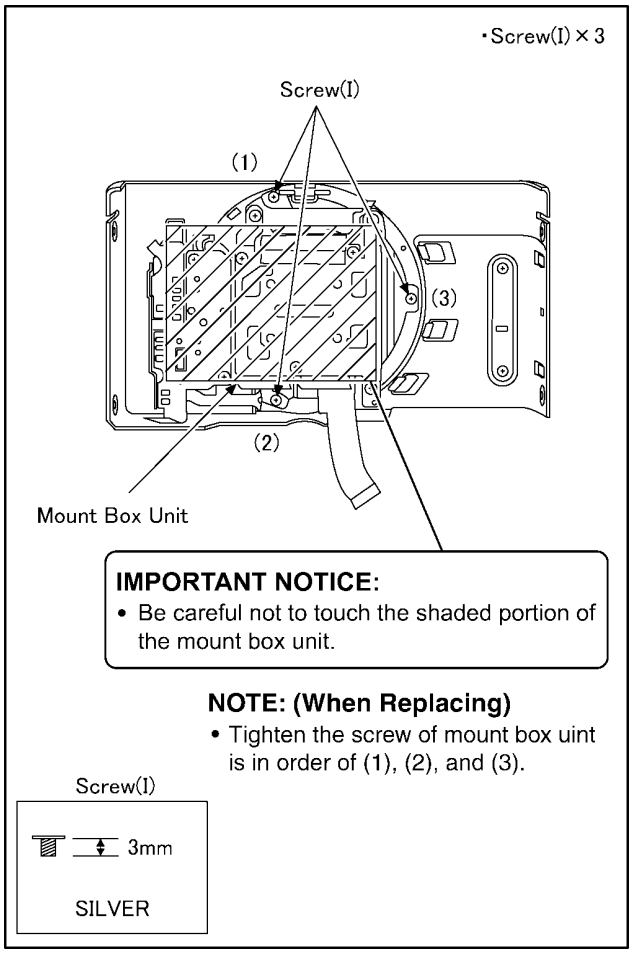


(Fig. D8)


NOTE: (When Installing)
• Through the lens flex of mount box unit to bottom hole of the E.capacitor.
• Take care not to damage the flex.
E.capacitor
Lens Flex of Mount Box Unit
Bottom Hole

(Fig. D9)

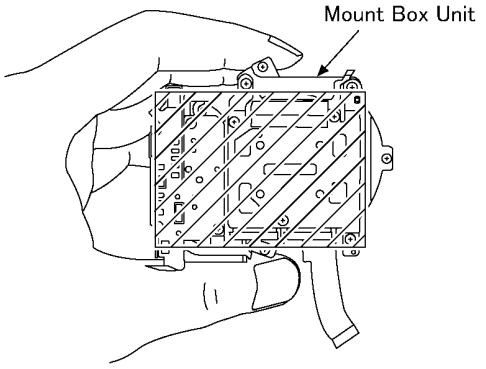
9.1.3.6. Removal of the Mount Box Unit



(Fig. D10)

■**Handling Precautions of Mount Box Unit**

IMPORTANT NOTICE:
- Be careful not to touch the shaded portion (X contact and motor, etc.) so that the characteristic of the mount box unit may change. Handle it as shown in the figure below.

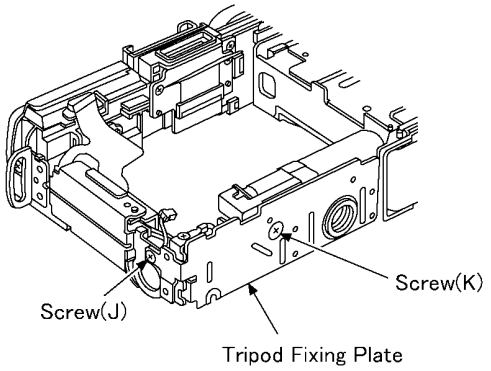


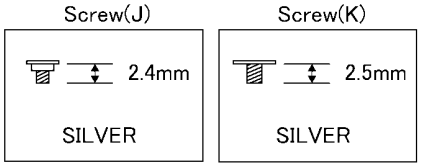
(Fig. D11)

9.1.3.7. Removal of the Capacitor P.C.B. Unit

IMPORTANT NOTICE:
- Take care not apply any bending load to the E.capacitor. It brings about the possibility of P.C.B. and/or component damage on the Capacitor P.C.B. Unit.

・Screw(J) × 1 ・Tripod Fixing Plate
・Screw(K) × 1

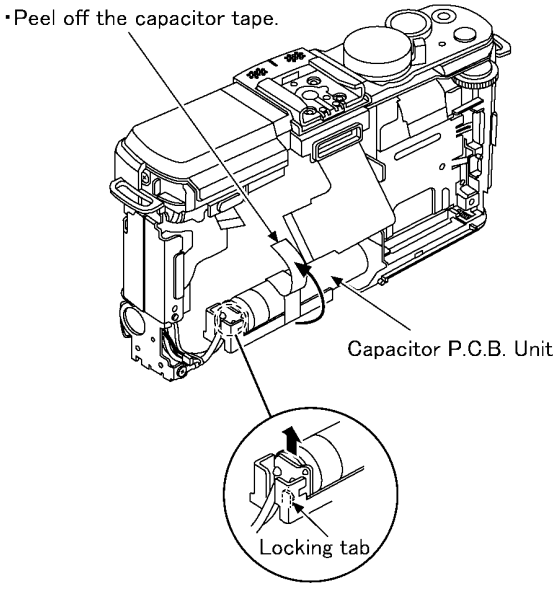


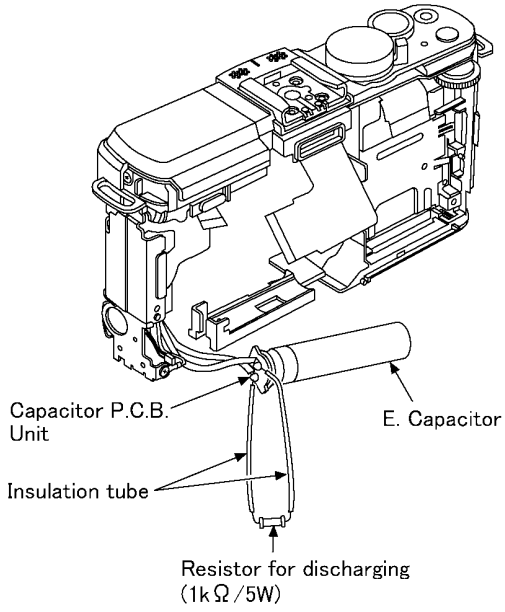


(Fig. D12)

IMPORTANT NOTICE:
- Take care not apply any bending load to the E.capacitor. It brings about the possibility of P.C.B. and/or component damage on the Capacitor P.C.B. Unit.

・Capacitor Tape
・Locking tab × 1





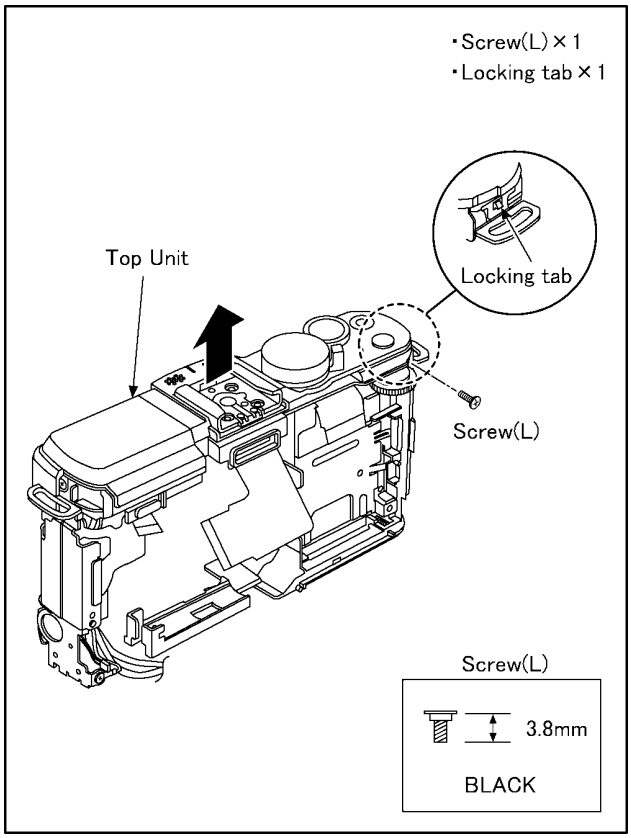
⚠ CAUTION

Be sure to discharge the E.Capacitor on Capacitor P.C.B. Unit before disassembling.

1. Remove the Capacitor P.C.B. Unit.
2. Put the insulation tube on the lead part of resistor (ERG5SJ102 : 1kΩ/5W).
3. Put the resistor between both terminals of capacitor unit for approx. 5 seconds.

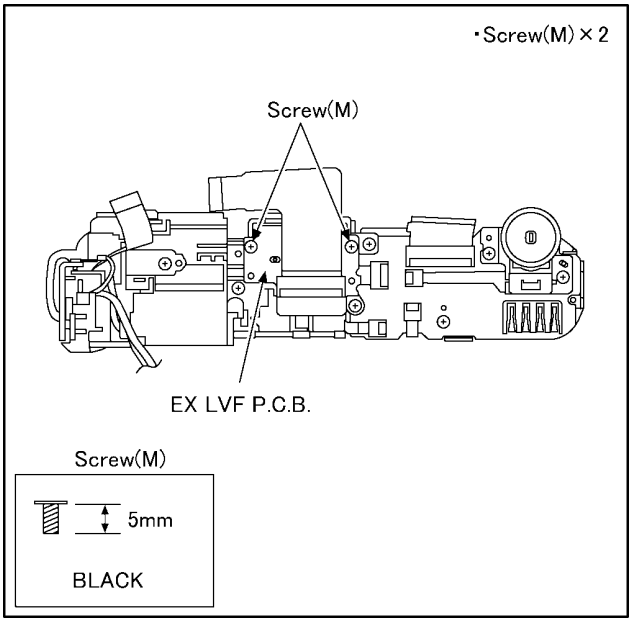
(Fig. D13)

9.1.3.8. Removal of the Top Unit



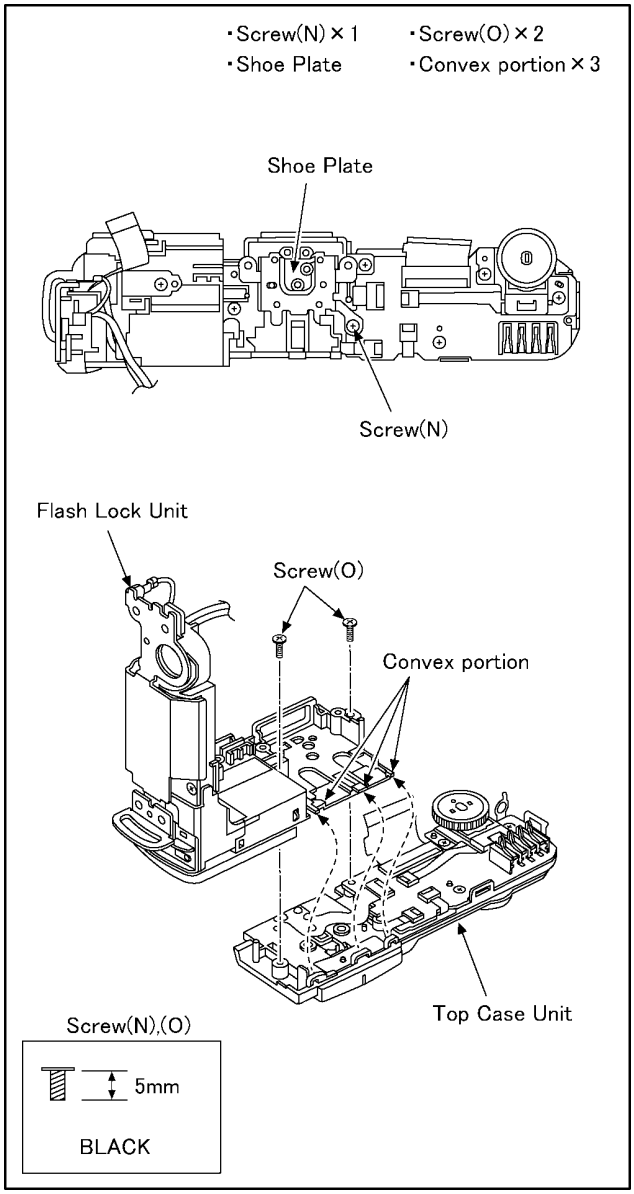
(Fig. D14)

9.1.3.9. Removal of the EX LVF P.C.B.



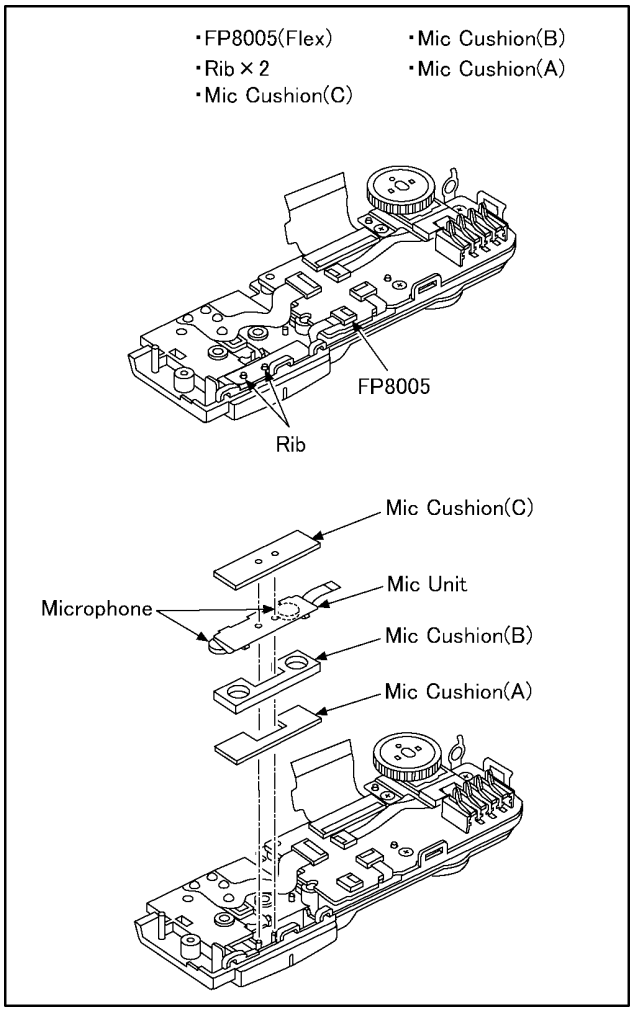
(Fig. D15)

9.1.3.10. Removal of the Flash Lock Unit and Top Case Unit



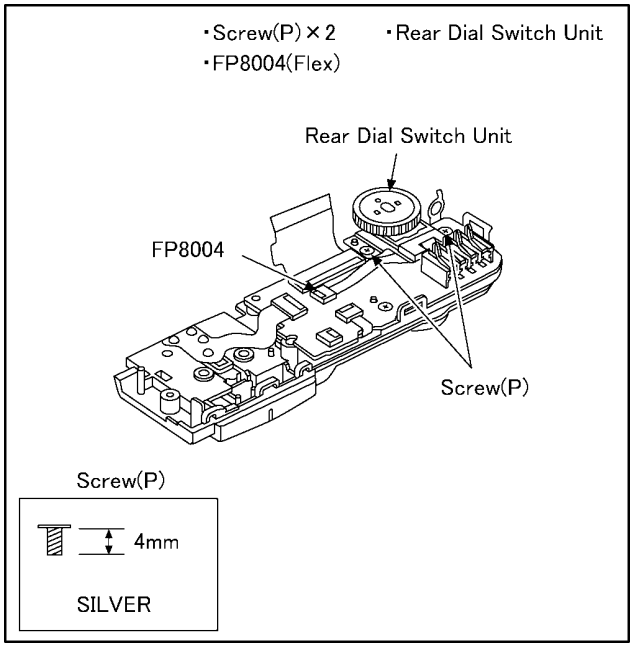
(Fig. D16)

9.1.3.11. Removal of the Mic Unit

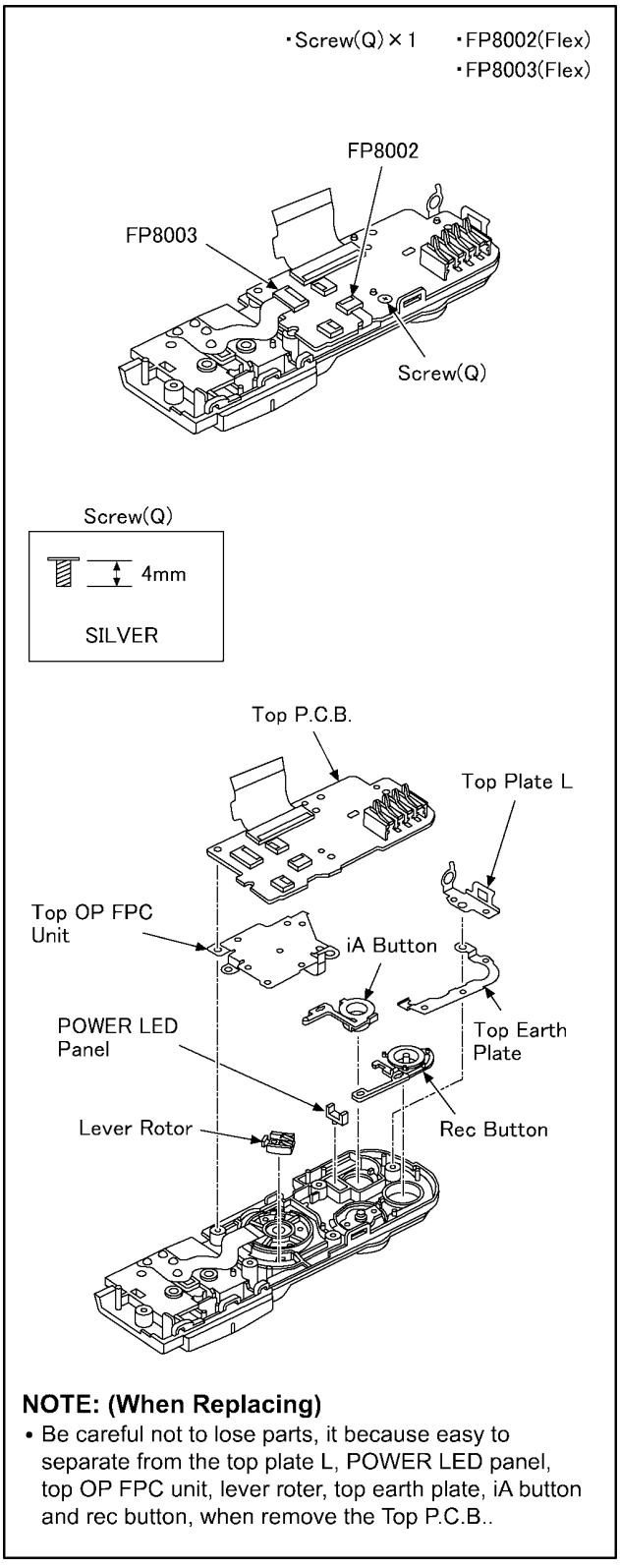


(Fig. D17)

9.1.3.12. Removal of the Top P.C.B.



(Fig. D18)

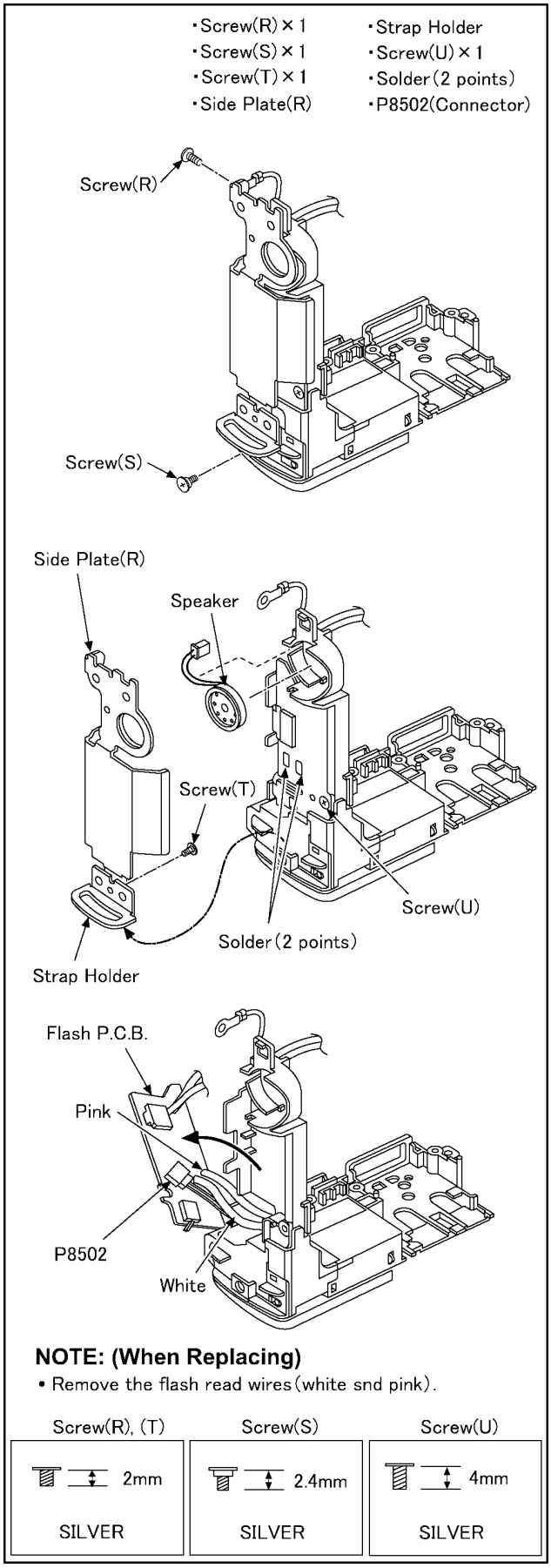


NOTE: (When Replacing)

- Be careful not to lose parts, it because easy to separate from the top plate L, POWER LED panel, top OP FPC unit, lever roter, top earth plate, iA button and rec button, when remove the Top P.C.B..

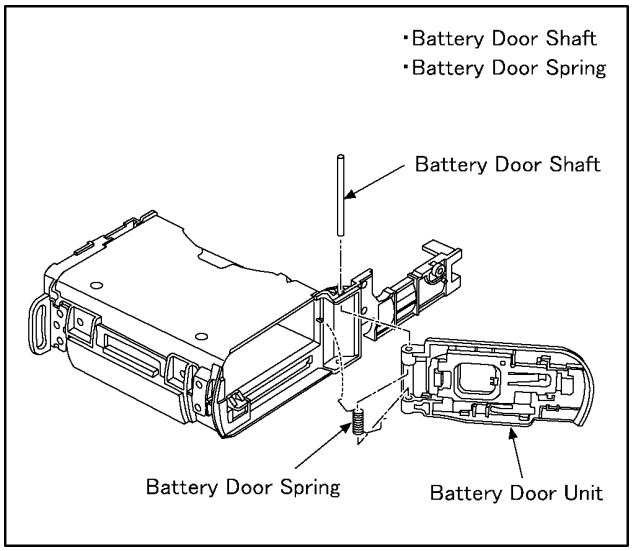
(Fig. D19)

9.1.3.13. Removal of the Speaker and Flash P.C.B.



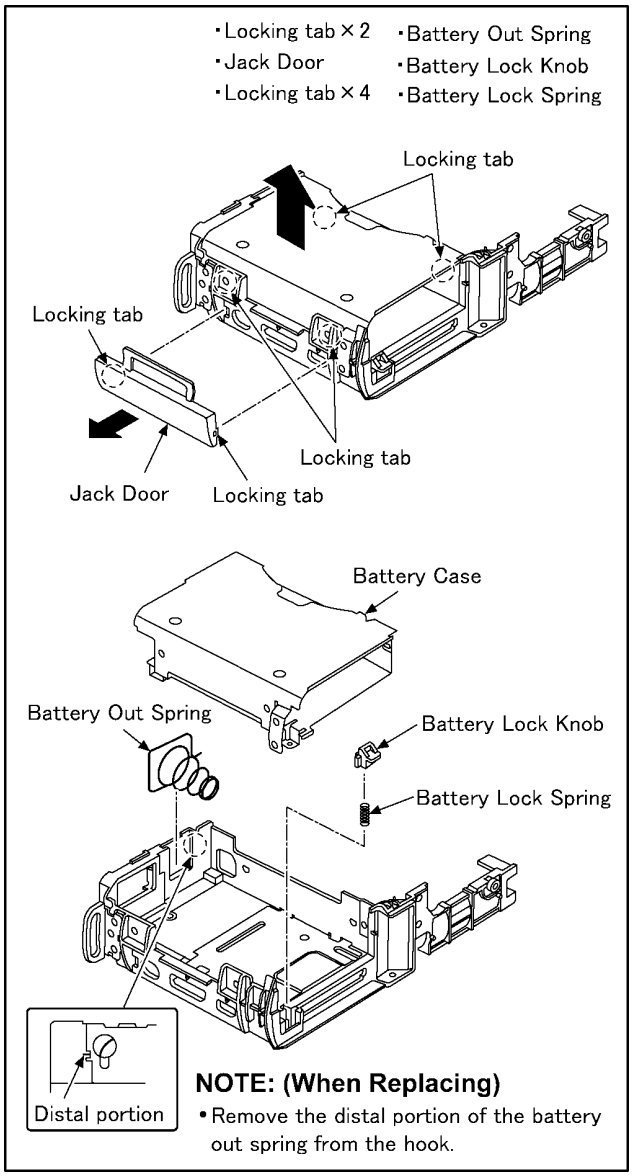
(Fig. D20)

9.1.3.14. Removal of the Battery Door Unit



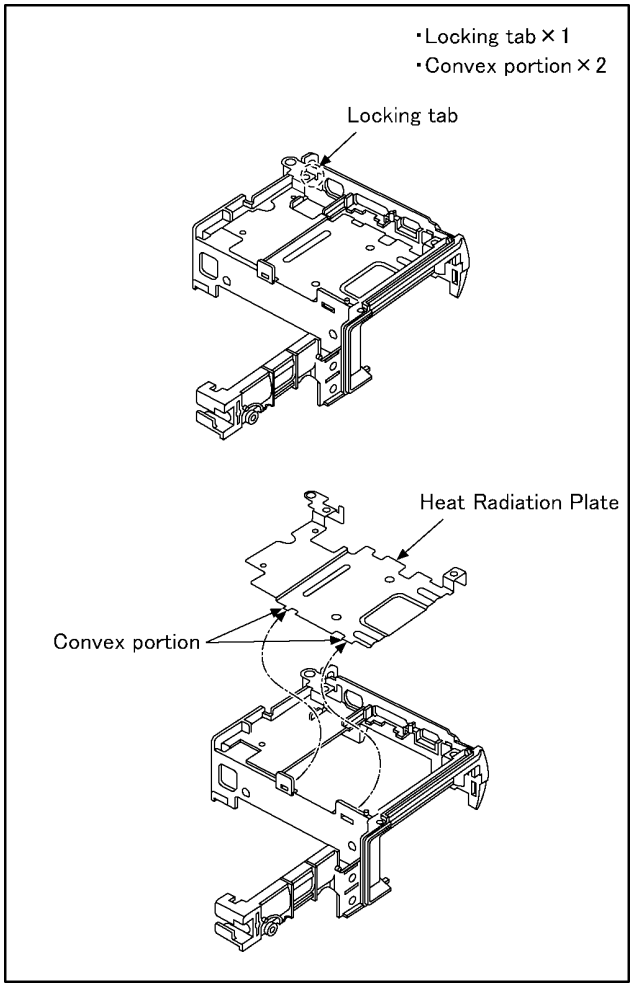
(Fig. D21)

9.1.3.15. Removal of the Battery Case



(Fig. D22)

9.1.3.16. Removal of the Heat Radiation Plate



(Fig. D23)

NOTE: (When Installing)

Make sure to confirm the following points when installing:

- The Screw is tightened enough.
- Installing conditions are fine. (No distortion, no abnormal-space.)
- No dust and/or dirt on Lens surfaces.
- LCD image is fine. (No dust and dirt on it, and no gradient images.)

9.2. Disassembly and Assemble Procedure for the Lens (H-PS14042)

Proceed disassemble and assemble, by referring the following table Fig. W1.

Important:

1. It is recommended dealing with Clean box, to keep maintaining the dustproof environment.
   (Refer to "8.2. Clean Box" section of this service manual for detailes.)
2. To minimize the possibilities/risk of getting the dust/dirt on the lens surface, keep covering the lens unit with lens caps (front & rear), other than necessary cases.
3. Do not touch the surface of the lens glasses with your fingers.
4. Blow off the dust on the surface of the lens with a blower brush.
5. Use lens cleaning KIT (BK)(VFK1900BK).

NOTE:

1. When tightening screws, use a torque driver (RFKZ0456) with specified torque mentioned in each step.

Caution:
Keep covering the lens unit with Lens caps (front & rear), other then necessary cases.

Concerned parts		Screws					Remarks
Parts Name	Ref. No.	Ref. No.	Colour	Length (mm)	Order	Torque value	
SHADING FRAME	208	B205	Black	3.0 mm	1	10±1.0 N·cm	
		B206	Black	3.0 mm	2	10±1.0 N·cm	
		B207	Black	3.0 mm	3	10±1.0 N·cm	
L MOUNT UNIT	207	B202	Silver	5.0 mm	1	20±1.2 N·cm	
		B203	Silver	5.0 mm	3	20±1.2 N·cm	
		B204	Silver	5.0 mm	2	20±1.2 N·cm	
MOUNT CONTACT UNIT	206	B201	Silver	3.0 mm	1	8±1.0 N·cm	

Refer to the "11.2.1. Precautions for Disassembly and Assembly" of the "11 Maintenance" When disassemble and assemble this part.

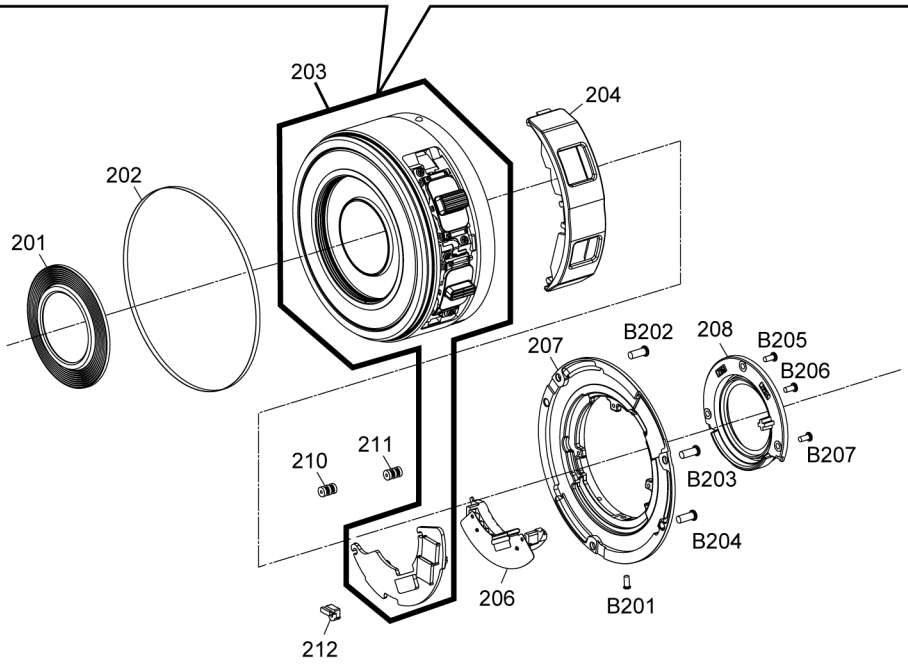


Fig. W1

9.3. Disassembly and Assemble Procedure for the Lens (H-FS014042)

It is recommended dealing with clean box, to keep maintaining the dustproof environment.
(Refer to "8.2. Clean Box" section of this service manual for details.)

Important:

1. When servicing the enclosure part (refer to Fig. W2), it must be performed inside of satisfied clean level.
   (Satisfied clean level: Less than class 10,000 (Federal Standard 209D))
   As for procedure, refer to the "11 Maintenance" for detailes.
2. To minimize the possibilities/risk of getting the dust/dirt on the lens surface, keep covering the lens unit with lens caps (front & rear), other than necessary cases.
3. Do not touch the surface of the lens glasses with your fingers.
4. Blow off the dust on the surface of the lens with a blower brush.
5. Use lens cleaning KIT (BK)(VFK1900BK).

Proceed disassemble/assemble, by referring the following table and Fig. W2.

NOTE:

1. When installing the screws, be sure to use the torque driver (RFKZ0456) and tighten the screws with specified torque, mentioned on the above table.
2. The Ref.B313 is no need to remove/install for disassembly and assembly.
   If necessary, use VFK1390 (small driver) when screwing it.

Interchangeable Lens (H-FS014042)

Caution:
Keep covering the lens unit with Lens caps (front & rear), other then necessary cases.

Concerned parts		Screws					Remarks
Parts Name	Ref. No.	Ref. No.	Colour	Length (mm)	Order	Torque value	
SHADING FRAME	302	B301	Black	4.0 mm	1	7±0.5 N·cm	
		B302	Black	4.0 mm	2	7±0.5 N·cm	
		B303	Black	4.0 mm	3	7±0.5 N·cm	
L MOUNT UNIT	306	B308	Black	5.0 mm	2	15±1.2 N·cm	
		B309	Black	5.0 mm	4	15±1.2 N·cm	
		B310	Black	5.0 mm	3	15±1.2 N·cm	
		B311	Black	5.0 mm	1	15±1.2 N·cm	
		B313	Black	3.0 mm	----	----	Use Small Driver (VFK1390)
REAR FRAME 2 UNIT	307	B304	Black	4.0 mm	1	7±0.5 N·cm	
		B305	Black	4.0 mm	4	7±0.5 N·cm	
		B306	Black	4.0 mm	3	7±0.5 N·cm	
		B307	Black	4.0 mm	2	7±0.5 N·cm	

Refer to the “11.3.1. Disassembly procedure” of the “11 Maintenance”
When disassemble and assemble this part.

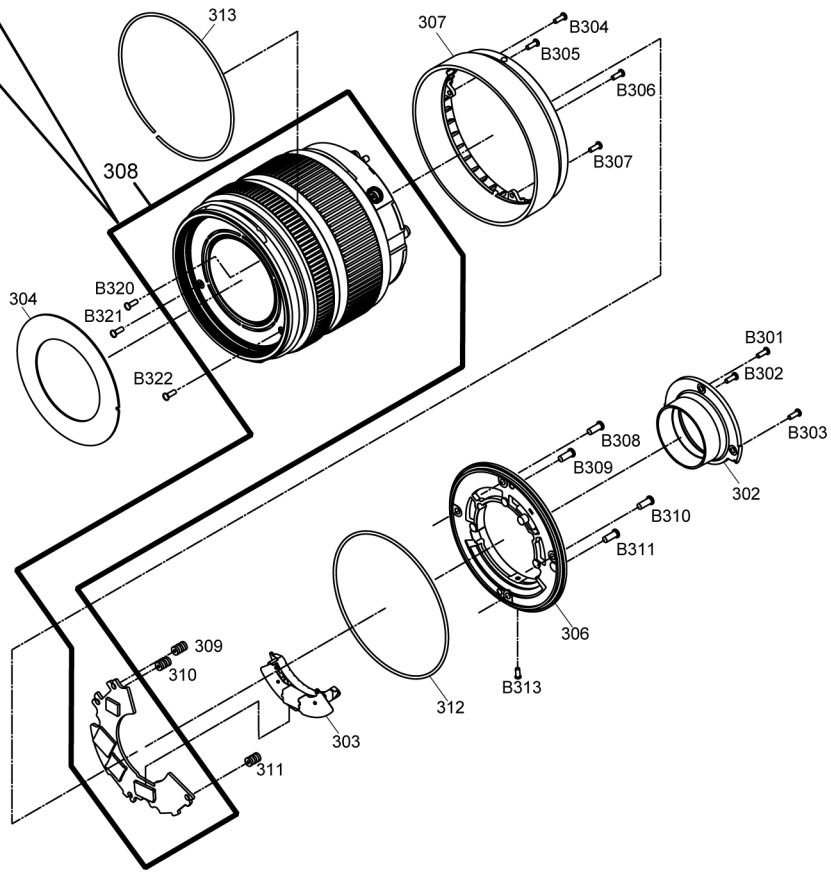


Fig. W2

9.4. Disassembly and Assemble Procedure for the Lens (H-H014)

It is recommended dealing with clean box, to keep maintaining the dustproof environment.
(Refer to "8.2. Clean Box" section of this service manual for details.)

NOTE:

1. When servicing the enclosure part (refer to Fig. W3), it must be performed inside of satisfied clean level.
   (Satisfied clean level: Less than class 10,000 (Federal Standard 209D))
   As for procedure, refer to the "11 Maintenance" for detailes.
2. To minimize the possibilities/risk of getting the dust/dirt on the lens surface, keep covering the lens unit with lens caps (front & rear), other than necessary cases.
3. Do not touch the surface of the lens glasses with your fingers.
4. Blow off the dust on the surface of the lens with a blower brush.
5. Use lens cleaning KIT (BK)(VFK1900BK).

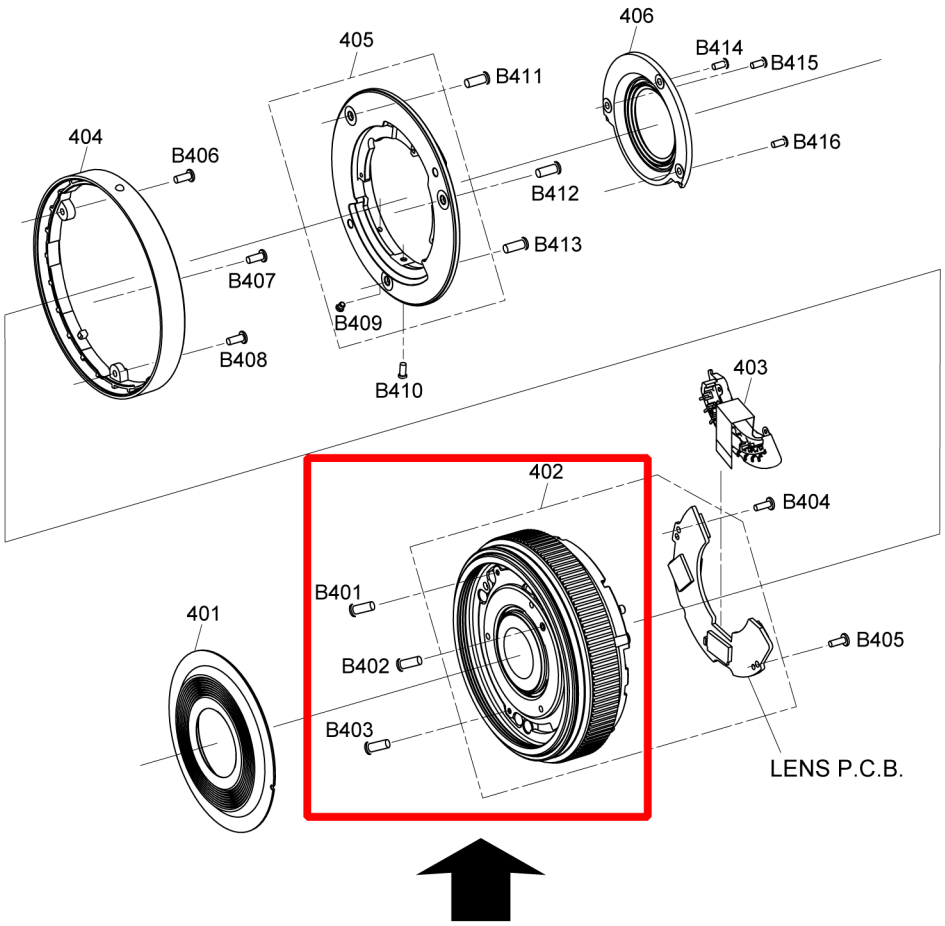
Interchangeable Lens (H-H014)

Caution:
Keep covering the lens unit with Lens caps (front & rear), other then necessary cases.

Concerned parts		Screws					Remarks
Parts Name	Ref. No.	Ref. No.	Colour	Length (mm)	Order	Torque value	
SHADING FRAME	406	B414	Black	3.0 mm	2	10±1.2 N·cm	
		B415	Black	3.0 mm	1	10±1.2 N·cm	
		B416	Black	3.0 mm	3	10±1.2 N·cm	
L MOUNT UNIT	405	B411	Silver	3.0 mm	3	20±1.0 N·cm	
		B412	Silver	3.0 mm	1	20±1.0 N·cm	
		B413	Silver	3.0 mm	2	20±1.0 N·cm	
		B410	Silver	3.0 mm	1	----	Use Small Driver (VFK1390)
REAR FRAME UNIT	404	B406	Black	4.0 mm	2	10±1.2 N·cm	
		B407	Black	4.0 mm	3	10±1.2 N·cm	
		B408	Black	4.0 mm	1	10±1.2 N·cm	
LENS MAIN U							
LENS P.C.B.	----	B404	Silver	3.0 mm	2	6±1.0 N·cm	
		B405	Silver	3.0 mm	1	6±1.0 N·cm	
1ST LENS FRAME U	----	B401	Silver	4.0 mm	1	10±1.2 N·cm	
		B402	Silver	4.0 mm	3	10±1.2 N·cm	
		B403	Silver	4.0 mm	2	10±1.2 N·cm	

NOTE:

1. .When installing the screws, be sure to use the torque driver (RFKZ0456) and tighten the screws with specified torque, mentioned on the above table.
2. The Ref.B409 is no need to remove/install for disassembly and assembly.
   If necessary, use VFK1390 (small driver) when screwing it.



*. When servicing the surrounding part with thick line, refer to “11.4.1. Method of cleaning inside of lens” .
*. It must be performed inside of satisfied clean level.
(Satisfied clean level : Less than class 10,000 Federal Standard 209D).

Fig. W3

10 Measurements and Adjustments

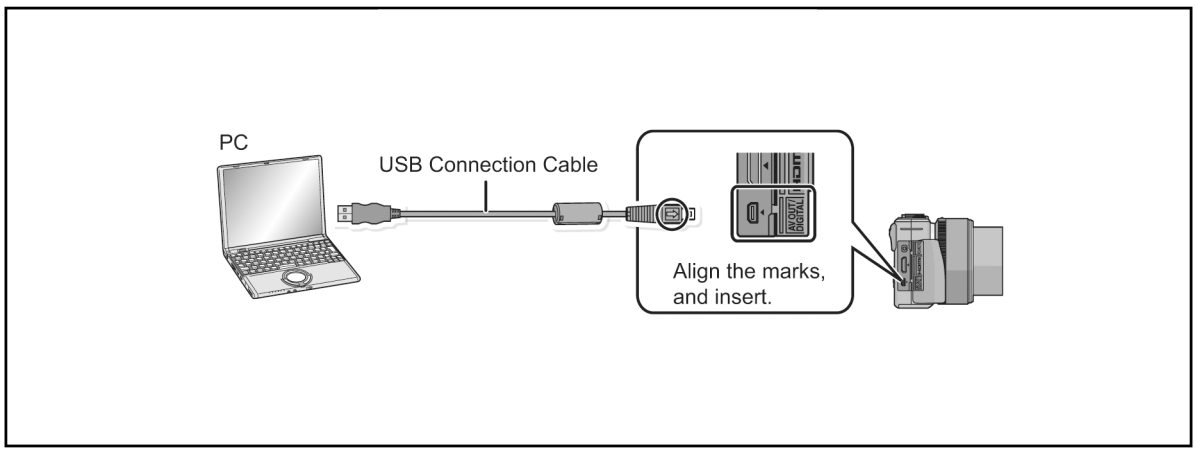
10.1. Matrix Chart for Replaced Part and Necessary Adjustment

The relation between Replaced part and Necessary Adjustment is shown in the following table.
When concerned part is replaced, be sure to achieve the necessary adjustment(s).
As for Adjustment condition/procedure, consult the “Adjustment Manual” which is available in Adjustment software.

NOTE:

After adjustments have been terminated, make sure to achieve “INITIAL SETTINGS”.
After updates it to the latest firmware, the adjustment is executed.

Adjustment Item			Mount Box Unit (*3)	Main P.C.B. (*2)	VENUS ENGINE (IC6001)	Flash-ROM (IC6002) (*2)	･Flash P.C.B.	LCDu	T. Panel Driver (IC9501)
Section Body	Camera	VENUS-ZOOM Inspection (PZM)	——	○	○	○	——	——	——
		ISO sensitivity adjustment (ISO)	○	○	——	○	——	——	——
		High brightness coloration inspection (SEN)	○	○	——	○	——	——	——
		Offset gain adjustment (SAT)	○	○	——	○	——	——	——
		AWB adjustment (WBL/WBM)(*5)	○	○	——	○	——	——	——
		IMAGE SENSOR white scratch compensation (WKI)	○	○	——	○	——	——	——
		IMAGE SENSOR black scratch compensation (BKI)	○	○	——	○	——	——	——
		Low illumination image quality correction (VSJ)	○	○	——	○	——	——	——
		G Sensor Adjustment	○	○	——	○	——	——	——
		Mount Box Adjustment data writing	○	———	———	———	——	——	——
		Mount box u readjustment	——	○	———	○	——	——	——
		AVCHD function inspection	——	○ (*4)	○ (*4)	○ (*4)	——	——	——
	Display	Touch panel adjustment (TPC)	——	○	——	○	——	○	○
Defect Part Division/ Inspection		Resolution inspection (*1)	○	———	———	———	——	——	——



***1**

- Inspect it, not only corresponding part is replaced, but also camera body is shocked and/or dropped.
- The Panasonic camera body in accordance with the Micro Four Thirds system (DMC-G1 unit, DMC-GH1 unit or DMC-GF1 unit etc. marketed commodity: operates normal) and a standard zoom lens H-FS014045 (marketed commodity: operates normal) is required as a reference machine.
- Refer to the adjustment instruction in the adjustment software for details.

***2 NOTE: (When exchange the MAIN P.C.B.)**

IMPORTANT NOTICE (After replacing the MAIN P.C.B.)

After replacing the MAIN P.C.B., make sure to perform the “INITIAL SETTINGS” first, then release the “INITIAL SETTINGS” in order to proceed the electrical adjustment.

NOTE:

1. If electrical adjustment or data re-writing is executed before “INITIAL SETTINGS”, suffix code list is never displayed, and it cannot be chosen suitable suffix code.
2. Never remove the battery during initial setting in process.

- Correspond by either the following when exchange the MAIN P.C.B. unavoidably by destruction and damage etc. of MAIN P.C.B..

1. When it can turn on power, and the adjustment software can communicate with the camera body:
   - Before replacing, proceed the Flash-ROM (IC6002) data backup from the unit. After replacing, overwrite the Flash-ROM (IC6002) data with backup data from the unit, before proceeding the main body adjustment.
2. When it cannot turn on power, or the adjustment software cannot communicate with the camera body:
   - The readjustment of mount box unit etc. are necessary.
   - Refer to the adjustment instruction in the adjustment software for details.

***3 NOTE: (After exchange the mount box unit)**

- Execute the resolution inspection by the comparison with the standard model (DMC-G1K etc.: operates normal).
- Refer to the adjustment instruction in the adjustment software for details.

***4**

- Confirm self recording/playback motion picture of AVCHD mode by the LCD.
- Confirm it on the TV with HDMI socket when repair HDMI relation.

* There are no LCD adjustment model.

***5 NOTE: (When AWB adjustment)**

- After change to WB adjustment mode for service with software, the adjustment is executed.
  After adjusting the AWB adjustment, to cancel the WB adjustment mode for service.
- Details, refer to the instructions in the adjustment software.

About the 3D interchangeable lens (H-FT012) correspondence

This unit has no special structure (circuit or part) for the 3D interchangeable lens correspondence, only by software is processed the 3D interchangeable lens correspondence.

Therefore, if taken with other lenses as usual, the 3D interchangeable lens is no problem for operation.

11 Maintenance

11.1. Notice in external cleaning

11.1.1. ABOUT THE BODY

NOTE:

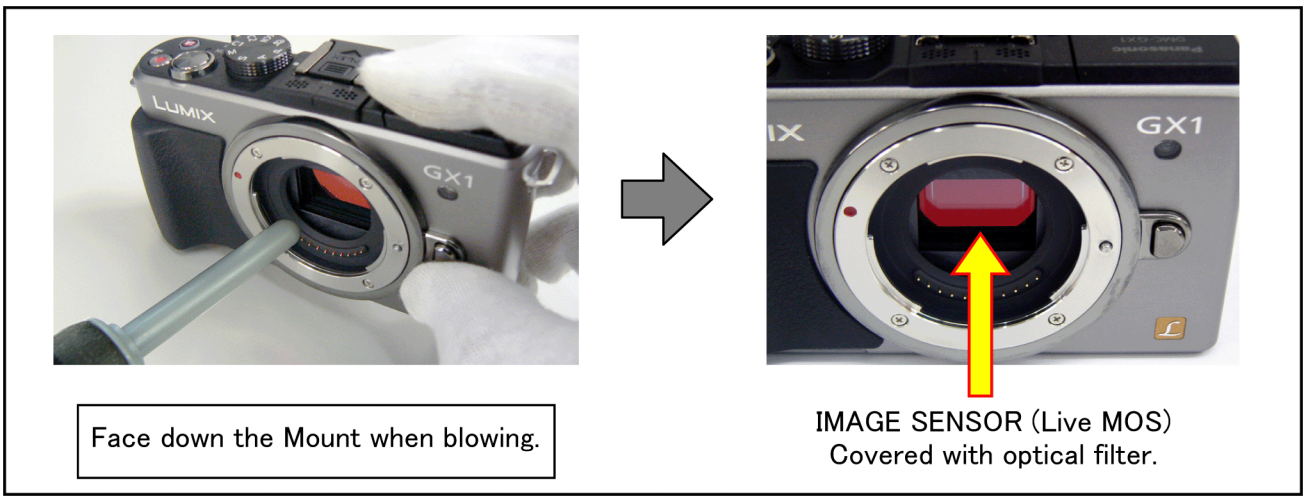
Before cleaning the camera, remove the battery and/or disconnect power plug from the outlet.
Also, remove the SD Memory card and lens unit.

11.1.1.1. DUST/DIRT ON THE OUTER CASING PART (S)

1. Blow off the dust first, then sweep out the dust from narrower spaces with soft cleaning brush.
2. Wipe up fingerprint and/or dirt on the Outer casing part with the dry fuzz-free cloth.

11.1.1.2. DUST/DIRT ON THE IMAGE SENSOR

1. Blow off the dust on the surface of the Image sensor with the Blower. (Refer to the following Figure.)
   - Keep the Mount Facing down condition towards to floor when cleaning.
   - Do not put the Blower further inside than the lens mount.
   - Be careful not to blow too strongly.
2. Wipe off the dirt on the image sensor surface with Lens cleaning KIT(BK)(VFK1900BK).



11.1.2. ABOUT THE LENS

11.1.2.1. DUST/DIRT ON THE OUTER CASING PART(S)

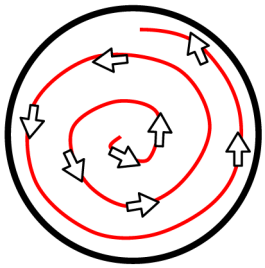
1. Blow off the dust first, then sweep out the dust from narrower spaces with soft cleaning brush.
2. Wipe up the Outer casing part with the dry fuzz-free cloth.

11.1.2.2. DUST/DIRT ON THE LENS GLASSES

• Define the location of the dust/dirt first, whether it is outside lens surface or not.

1. When it is outside surface of the lens:
   • When the dust and/or dirt gets on the outer side surface of the Lens glasses, order the following procedures.
   a. Blow off the dust on the Lens glass surface with the Blower, gently. (Do not Blow too strongly.)
   b. Wipe out the dirt on the lens glass surface with Lens cleaning KIT(BK) (VFK1900BK) if necessary. (Consult the Instruction sheet which is included in the Lens cleaning KIT(BK) in details.)
2. When it is inside of the lens:
   • Refer to the “11.3. General description (Lens cleaning: Interchangeable Lens/H-FS014042)”, “11.4. General description (Lens cleaning: Interchangeable Lens/H-H014)” section of this service manual.

[Cleaning Instructions]



Wipe the lens surface with cleaning sheet starting from centre towards to outside in a circular motion.

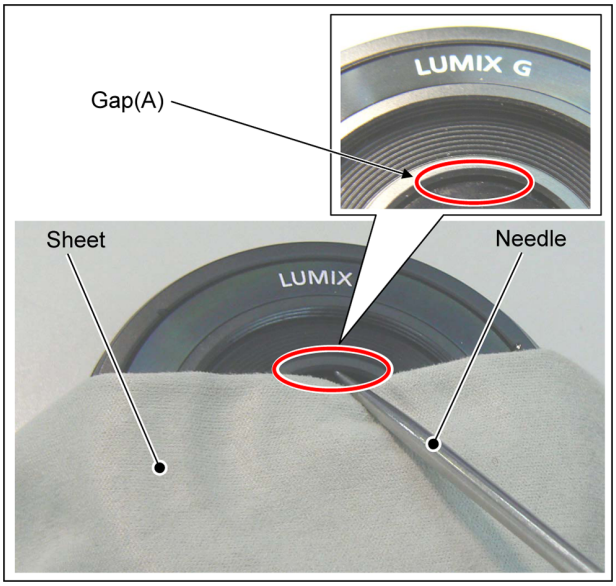
11.2. General description (Interchangeable Lens/H-PS14042)

• The interchangeable lens: H-PS14042 does not support cleaning of the inner surface of lens (inside the lens barrel).
• For cleaning of the outer surface of lens (the outer lens barrel), refer to the “11.1.2.2. DUST/DIRT ON THE LENS GLASSES”.

11.2.1. Precautions for Disassembly and Assembly

11.2.1.1. Removal of the Decoring

1. Decoring is sticked on the lens(1).
2. Put the sheet so that the lens glass is fully covered.
3. Insert the needle to Gap (A) (between the Decoring and lens glass), and peel off the Decoring gently.



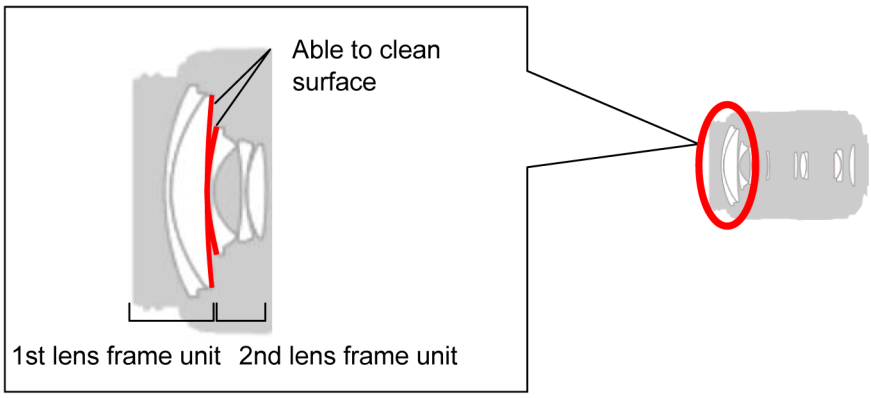
11.2.1.2. Installation of the Decoring

1. Align the hole of Decoring and the character "LUMIX G", and then stick them.

• Use new Decoring. (Do not use the one which is removed.)After installing the Decoring, press the Decoring with your finger.

11.3. General description (Lens cleaning: Interchangeable Lens/H-FS014042)

When there is a dust/dirt inside surface of the 1st lens frame unit and/or subject side surface of the 2nd lens frame unit, remove it by referring the following procedures.



CAUTION

*DO NOT REMOVE 1st LENS FRAME UNIT OTHER THAN INSIDE OF SPECIFIED CLEAN LEVEL.
(Specified clean level: Less than class 10,000 (Federal Standard 209D))

Important:

1. When removing the 1st lens frame unit, it has to be proceed inside of satisfied clean level.
   (Less than class 10,000 (Federal Standard 209D))
   As for clean box, refer to the "8.2. Clean Box", in details.
2. When tighten the screws (A), use torque driver (RFKZ0456) with specified torque.
3. To keep the Lens performance, use only the 1st lens frame unit which was fitted as it was.
   Therefore, the 1st lens frame unit is not supplied as spare parts.
   Also do not exchange the 1st lens unit taking from others.

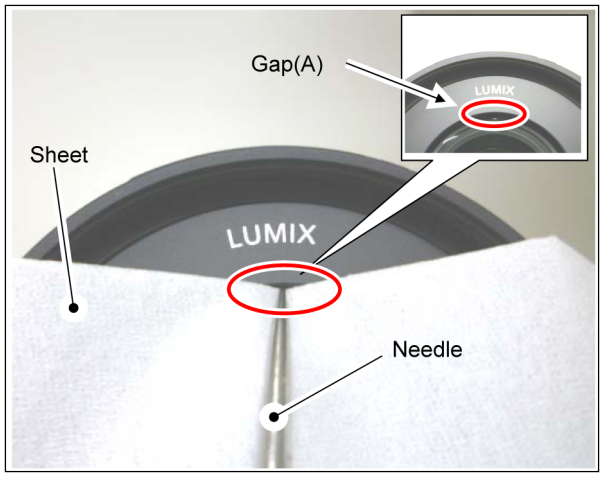
11.3.1. Disassembly procedure

Important:

It must be performed inside of satisfied clean level. (Satisfied clean level: Less than class 10,000 (Federal Standard 209D))

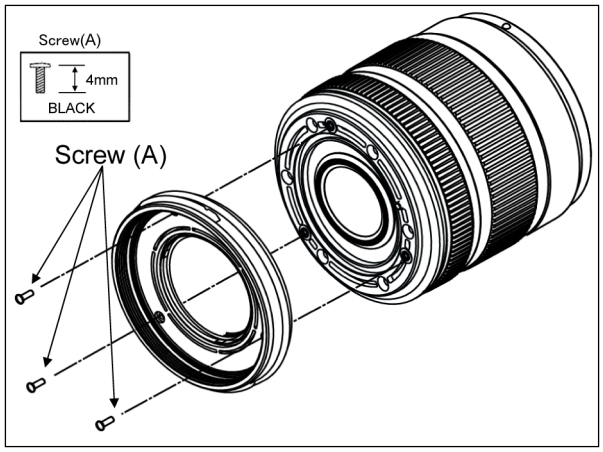
11.3.1.1. Removal of the Decoration Ring

1. Decoration ring is sticked on the 1st lens frame unit.
2. Put the sheet so that the lens glass is fully covered.
3. Insert the needle to Gap (A) (between the decoration ring and lens glass), and peel off the decoration ring gently.



11.3.1.2. Removal of the 1st Lens Frame Unit

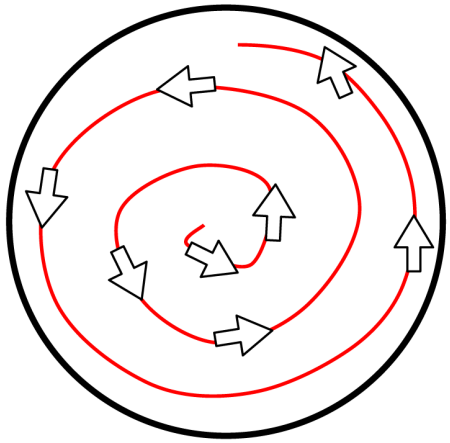
1. Remove the 3 screws (A).



11.3.1.3. Removal of a dust /dirt

1. Blow off the dust on the surface of the lens with a blower brush.
2. Use lens cleaning KIT(BK) (VFK1900BK), if necessary.

[Cleaning Instructions]



Wipe the lens surface with cleaning sheet starting from centre towards to outside in a circular motion.

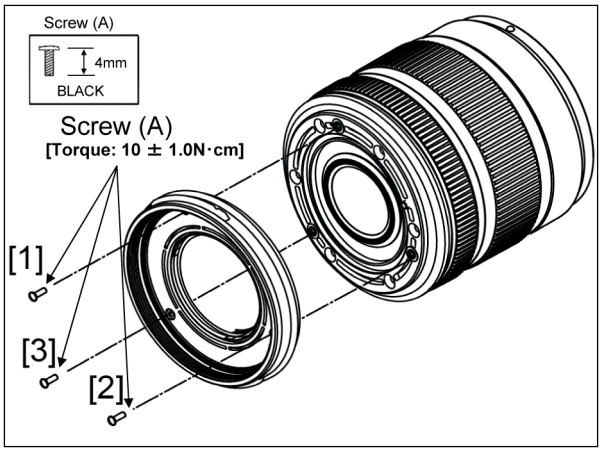
11.3.2. Assembly procedure

Important:

When tightening the screw, use a torque driver (RFKZ0456) by ordering the screwing order with specified torque described in each step.

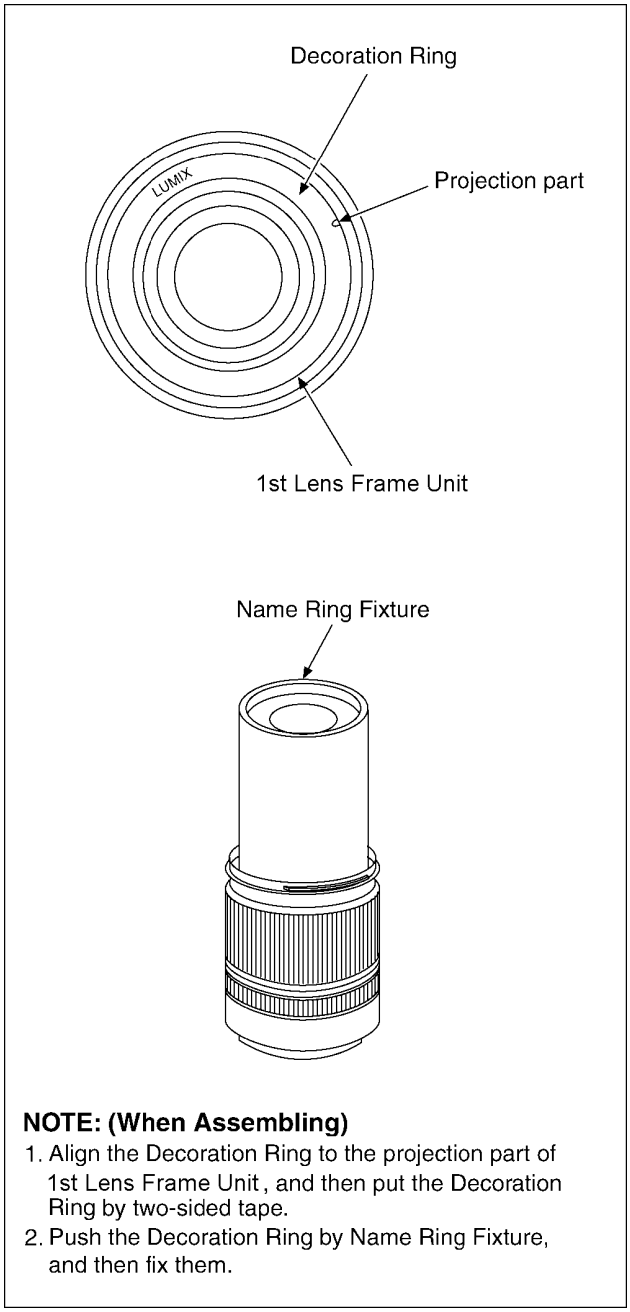
11.3.2.1. Installation of the 1st lens frame unit

1. Tighten the 3 screws (A) with specified torque in numerical order.
   (Torque Driver: RFKZ0456)
   (Torque: 10 ± 1.0 N-cm)



11.3.2.2. Installation of the Decoration Ring

1. Use the Name Ring fixture (RFKZ0507)
2. Use new Decoration ring. (Do not use the one which is removed.)

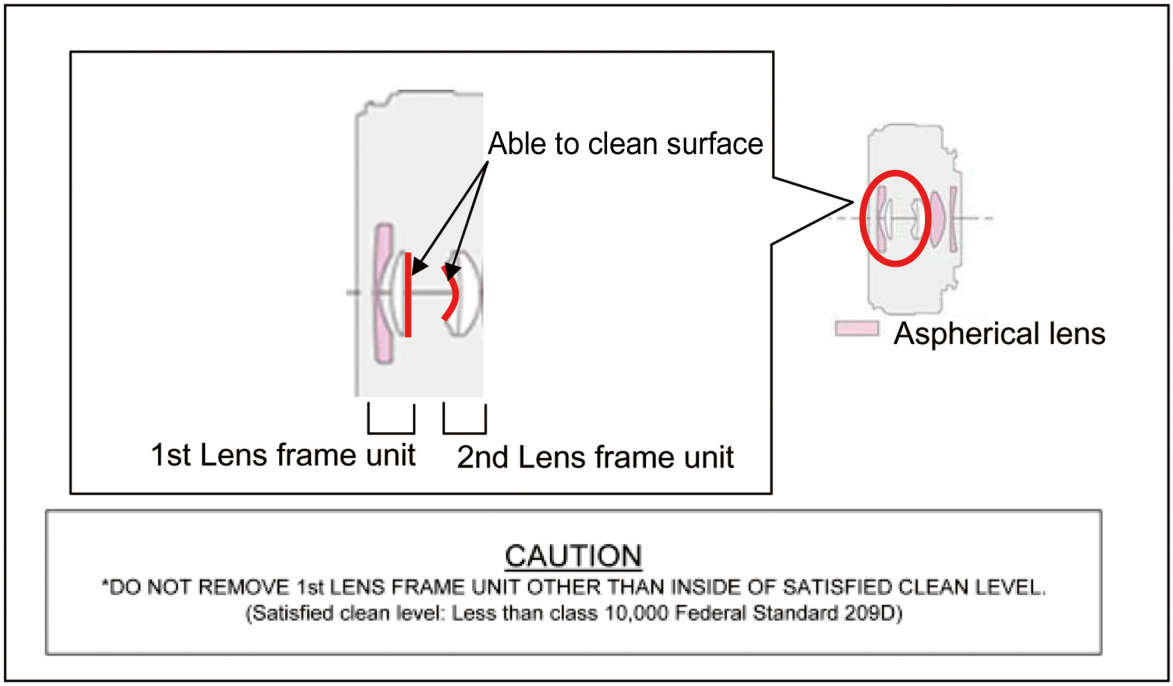


NOTE: (When Assembling)

1. Align the Decoration Ring to the projection part of 1st Lens Frame Unit , and then put the Decoration Ring by two-sided tape.
2. Push the Decoration Ring by Name Ring Fixture, and then fix them.

11.4. General description (Lens cleaning: Interchangeable Lens/H-H014)

When there is a dust/dirt inside surface of the 1st lens frame unit and/or subject side surface of the 2nd lens frame unit, remove it by referring the following procedures.


Able to clean surface
Aspherical lens
1st Lens frame unit
2nd Lens frame unit
CAUTION
*DO NOT REMOVE 1st LENS FRAME UNIT OTHER THAN INSIDE OF SATISFIED CLEAN LEVEL.
(Satisfied clean level: Less than class 10,000 Federal Standard 209D)

Important:

1. When removing the 1st lens frame unit, it has to be proceed inside of satisfied clean level.
   (Less than class 10,000 (Federal Standard 209D))
   As for clean box, refer to the "8.2. Clean Box", in details.
2. When tighten the screws (A), use torque driver (RFKZ0456) with specified torque.
3. To keep the Lens performance, use only the 1st lens frame unit which was fitted as it was.
   Therefore, the 1st lens frame unit is not supplied as spare parts.
   Also do not exchange the 1st lens unit taking from others.

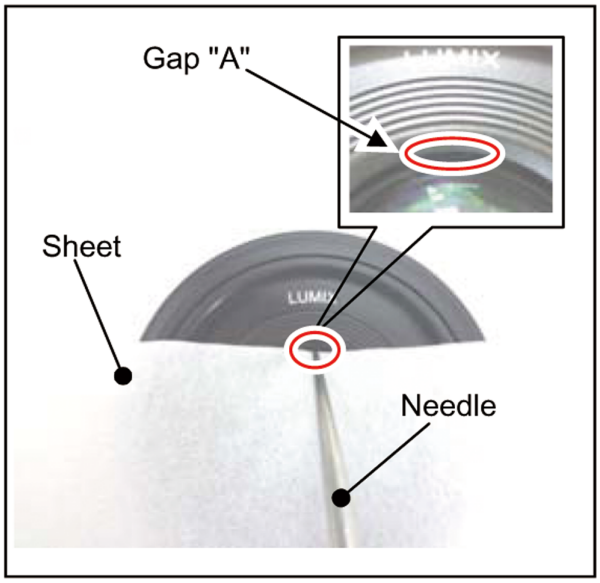
11.4.1. Method of cleaning inside of lens

11.4.1.1. Disassembly procedure

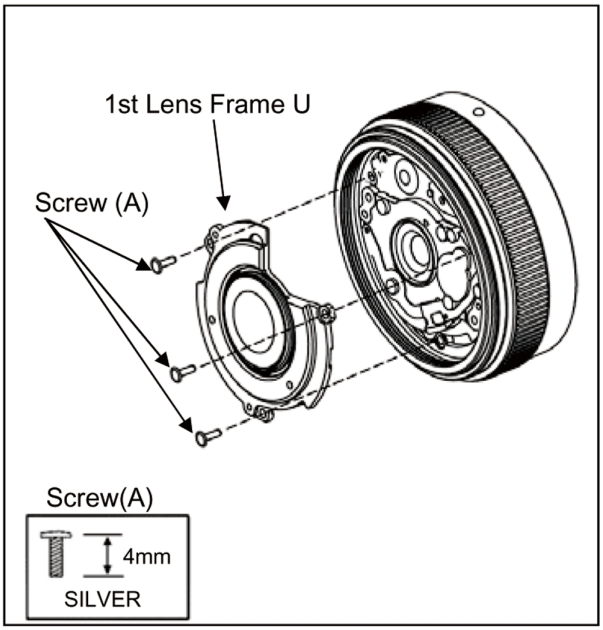
Important:

It must be performed inside of satisfied clean level. (Satisfied clean level: Less than class 10,000 (Federal Standard 209D))

1. **Removal of the Decoration Ring**
   *.Decoration ring is sticked on the 1st lens frame unit.
   *.Put the sheet so that the lens glass is fully covered.
   *.Insert the needle to Gap “A” (between the Decoration ring and Lens glass), and peel off the Decoration ring gently.



2. **Removal of the 1st Lens frame unit**
   *.Remove 3 screws (A).



*. Blow off the dust on the surface of the lens with a blower brush.

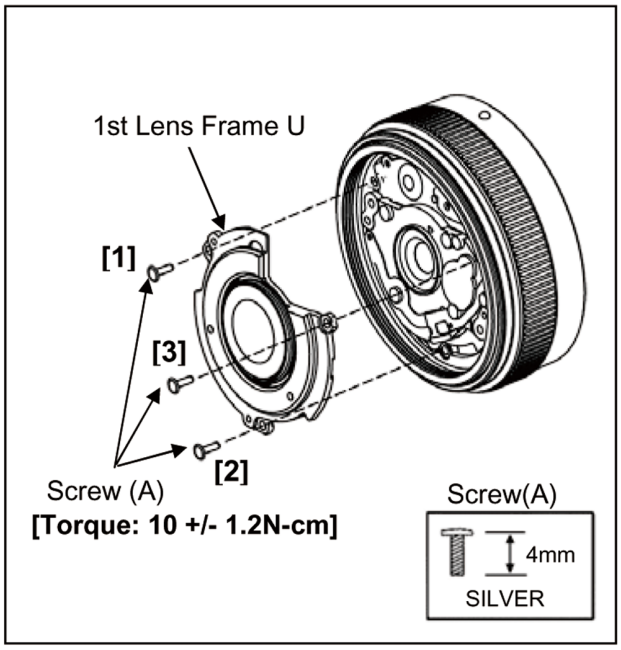
*. Use lens cleaning KIT (BK)(VFK1900BK), if necessary.

11.4.1.2. Assembly procedure

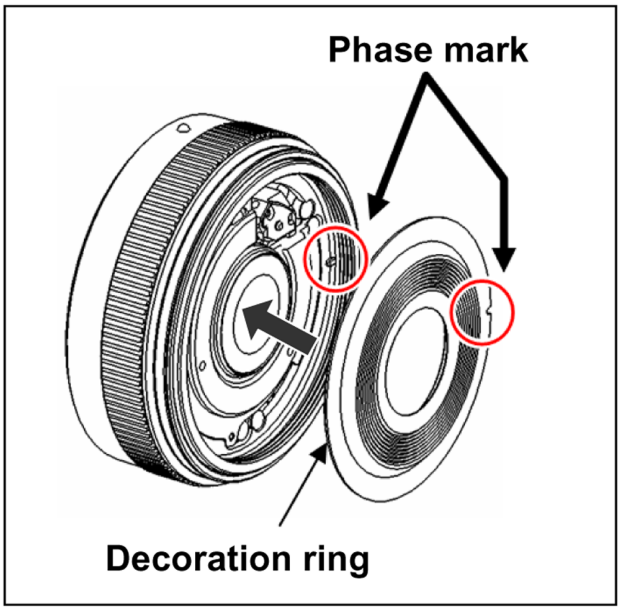
IMPORTANT NOTICE:

*.When tightening the screw, use a Torque driver (RFKZ0456) by ordering the screwing order with specified torque descrived in each step.

1. **Installation of the 1st Lens frame unit**
   *Tighten the 3 screws (A) with specified torgue in numerical order.



2. **Installation of the Decoration ring**
   *Install the Decoration ring by referring the phase mark. (Use new one, Do not use the one which is removed.)



* After installing the Decoration ring, press the decoration ring with your finger.

DSC1112063CE

Service Manual

Diagrams and Replacement Parts List

Digital Camera/Lens Kit/Double Lens Kit/Body

Model No.

DMC-GX1KPP	DMC-GX1PP	DMC-GX1GD	DMC-GX1XEC	DMC-GX1XGN
DMC-GX1KPC	DMC-GX1PC	DMC-GX1GH	DMC-GX1XEE	DMC-GX1XGT
DMC-GX1KEB	DMC-GX1EB	DMC-GX1GK	DMC-GX1XEF	DMC-GX1WGC
DMC-GX1KEC	DMC-GX1EC	DMC-GX1GN	DMC-GX1XEG	DMC-GX1WGD
DMC-GX1KEE	DMC-GX1EE	DMC-GX1GT	DMC-GX1XGC	DMC-GX1WGH
DMC-GX1KEF	DMC-GX1EF	DMC-GX1XPP	DMC-GX1XGD	DMC-GX1WGK
DMC-GX1KEG	DMC-GX1EG	DMC-GX1XPC	DMC-GX1XGH	DMC-GX1WGT
DMC-GX1KGN	DMC-GX1GC	DMC-GX1XEB	DMC-GX1XGK	

Vol. 1
Colour

[DMC-GX1K]
(K).....Black Type
(S).....Silver Type (except EC/EE/GN)

[DMC-GX1X]
(K).....Black Type
(S).....Silver Type (except PC)

[DMC-GX1]
(K).....Black Type
(S).....Silver Type (except PC/EC/EE/EF/GK/GN)

[DMC-GX1W]
(K).....Black Type
(S).....Silver Type

DMC-GX1K series: Interchangeable Lens (H-FS014042) is bundled.
DMC-GX1X series: Interchangeable Lens (H-PS14042) is bundled.
DMC-GX1W series: Interchangeable Lens (H-H014/H-FS014042) are bundled.

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S1. About Indication of The Schematic Diagram

S1.1. Important Safety Notice

COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS USE ONLY THE SAME TYPE.

1.Although reference number of the parts is indicated on the P.C.B. drawing and/or schematic diagrams, it is NOT mounted on the P.C.B. when it is displayed with "$" mark.

2.It is only the "Test Round" and no terminal (Pin) is available on the P.C.B. when the TP (Test Point) indicated as "●" mark.

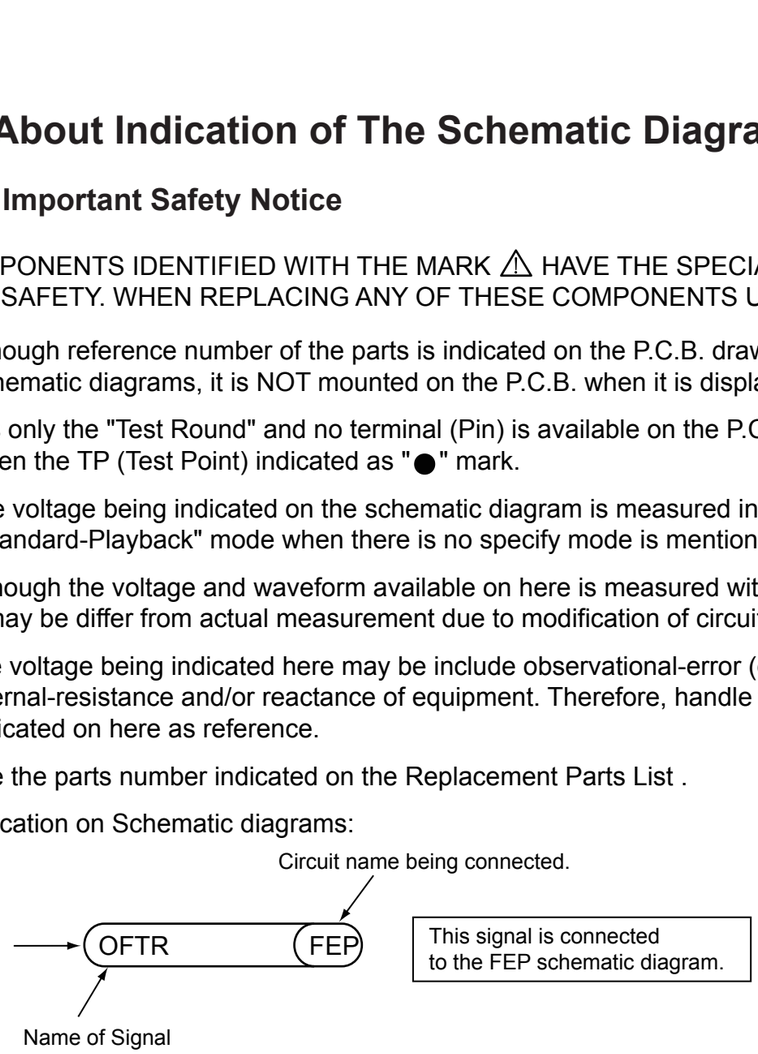
3.The voltage being indicated on the schematic diagram is measured in "Standard-Playback" mode when there is no specify mode is mentioned.

4.Although the voltage and waveform available on here is measured with standard frame, it may be differ from actual measurement due to modification of circuit and so on.

5.The voltage being indicated here may be include observational-error (deviation) due to internal-resistance and/or reactance of equipment. Therefore, handle the value indicated on here as reference.

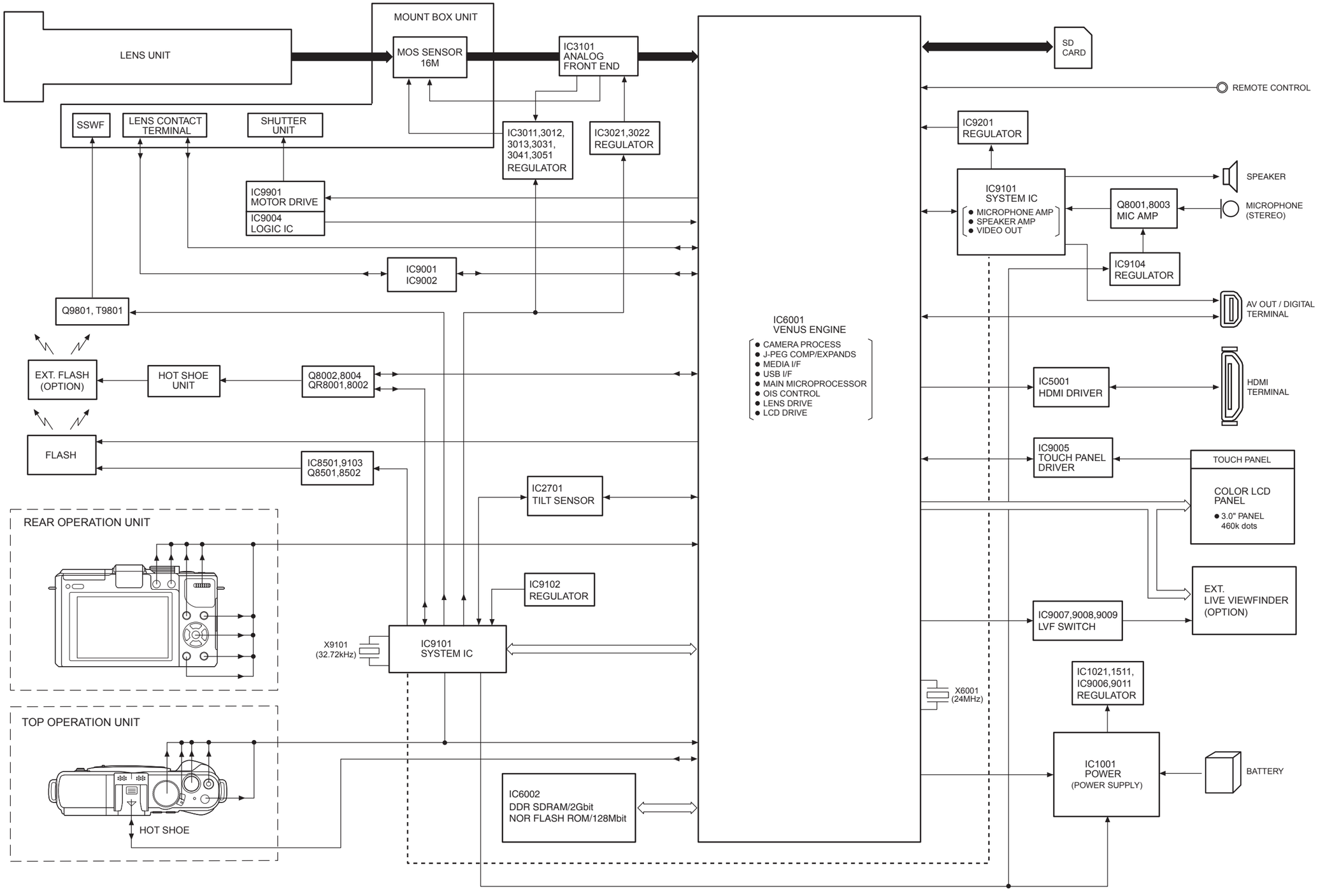
6.Use the parts number indicated on the Replacement Parts List .

7.Indication on Schematic diagrams:



S2. Block Diagram

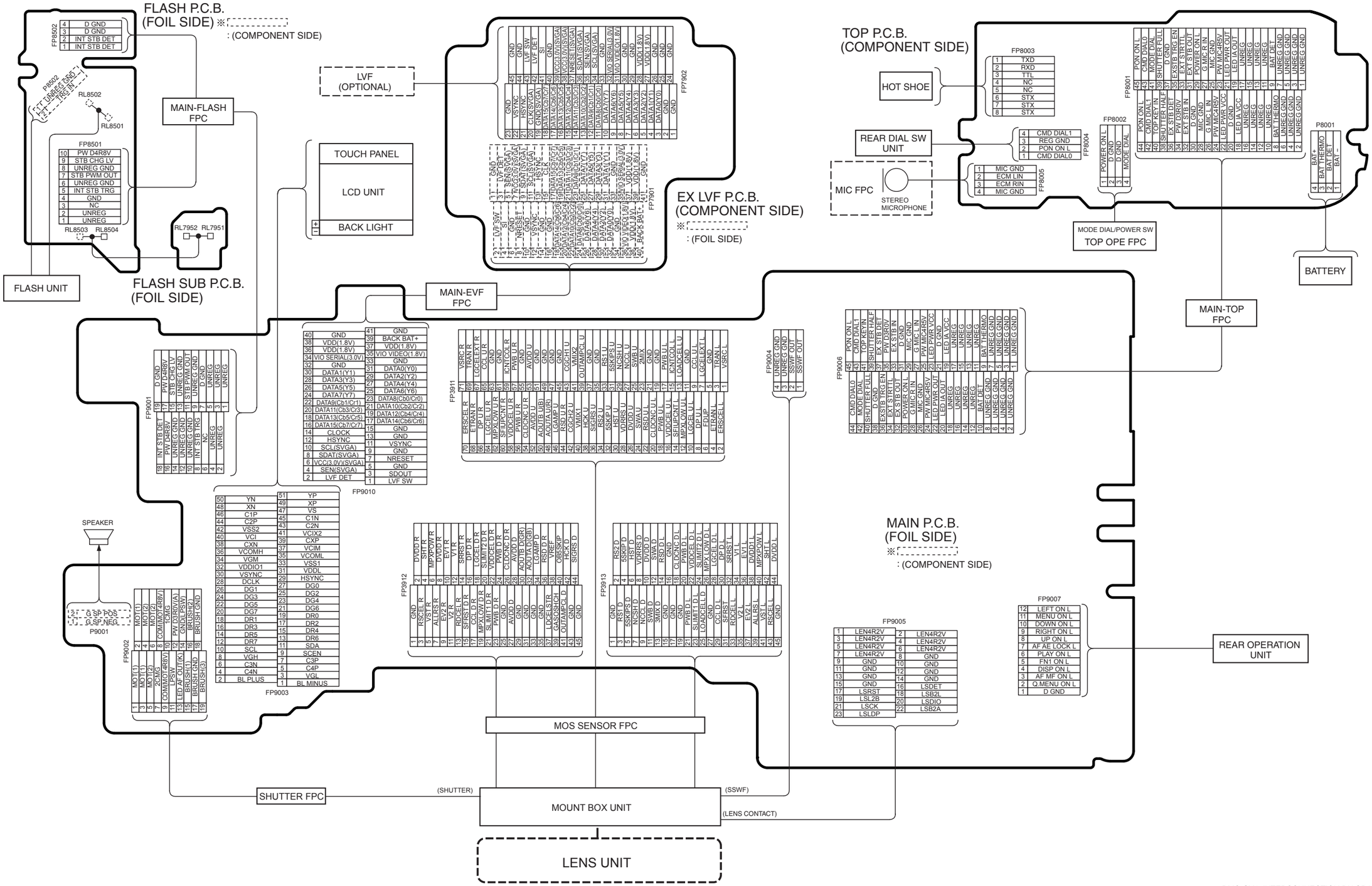
S2.1. Overall Block Diagram



DMC-GX1 OVERALL BLOCK DIAGRAM

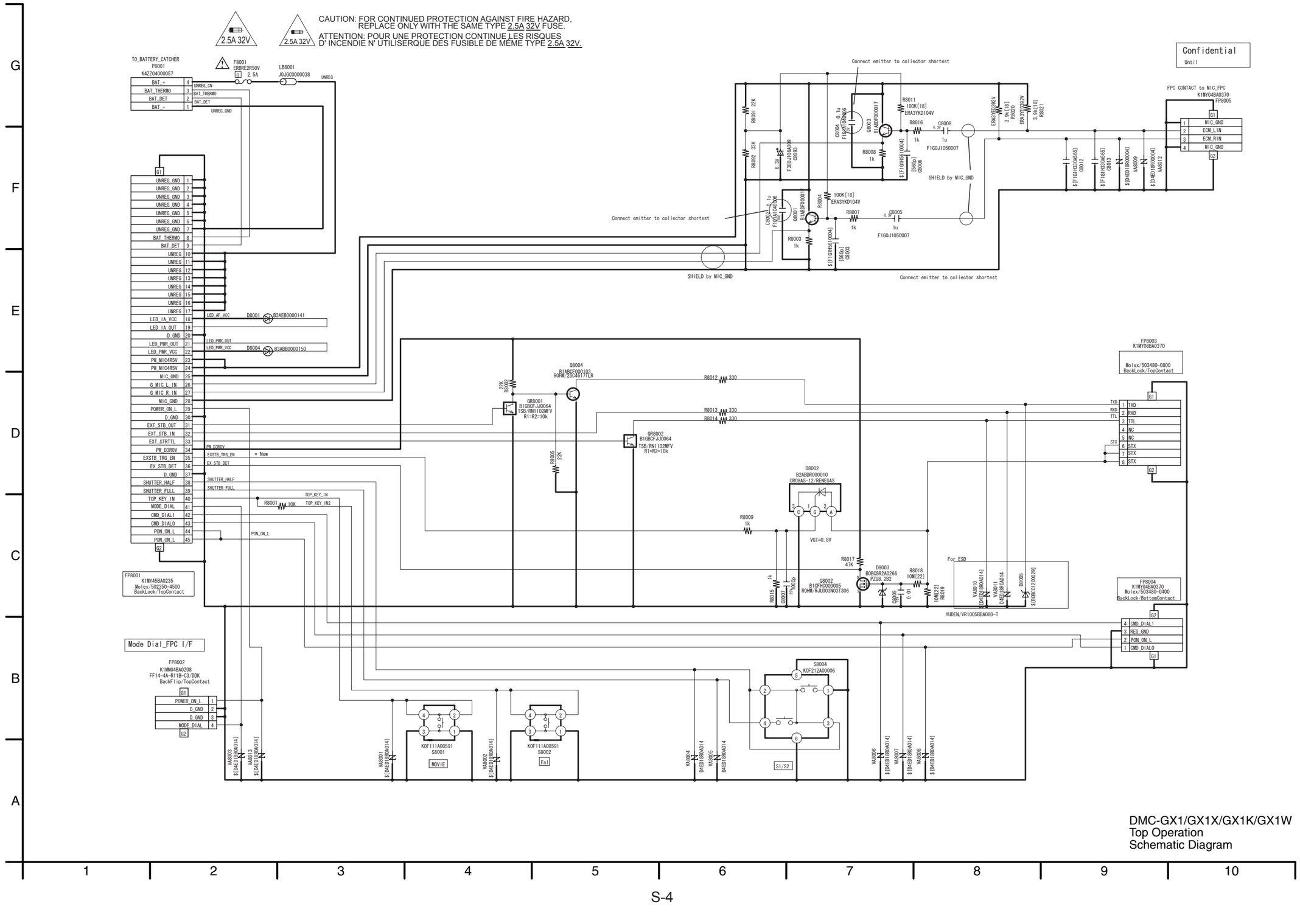
S3. Schematic Diagram

S3.1. Interconnection Diagram

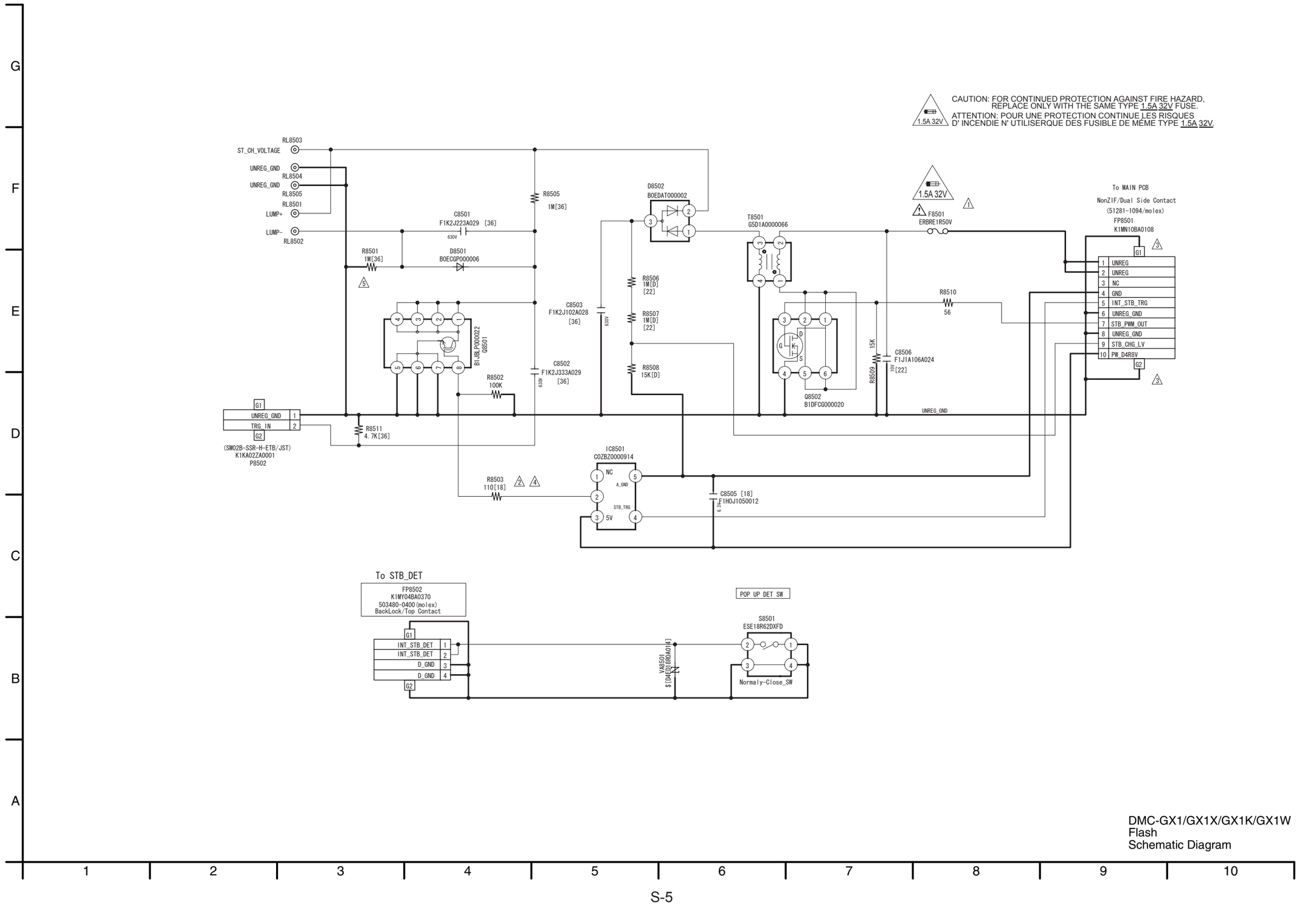


DMC-GX1 INTERCONNECTION DIAGRAM

S3.2. Top Operation Schematic Diagram

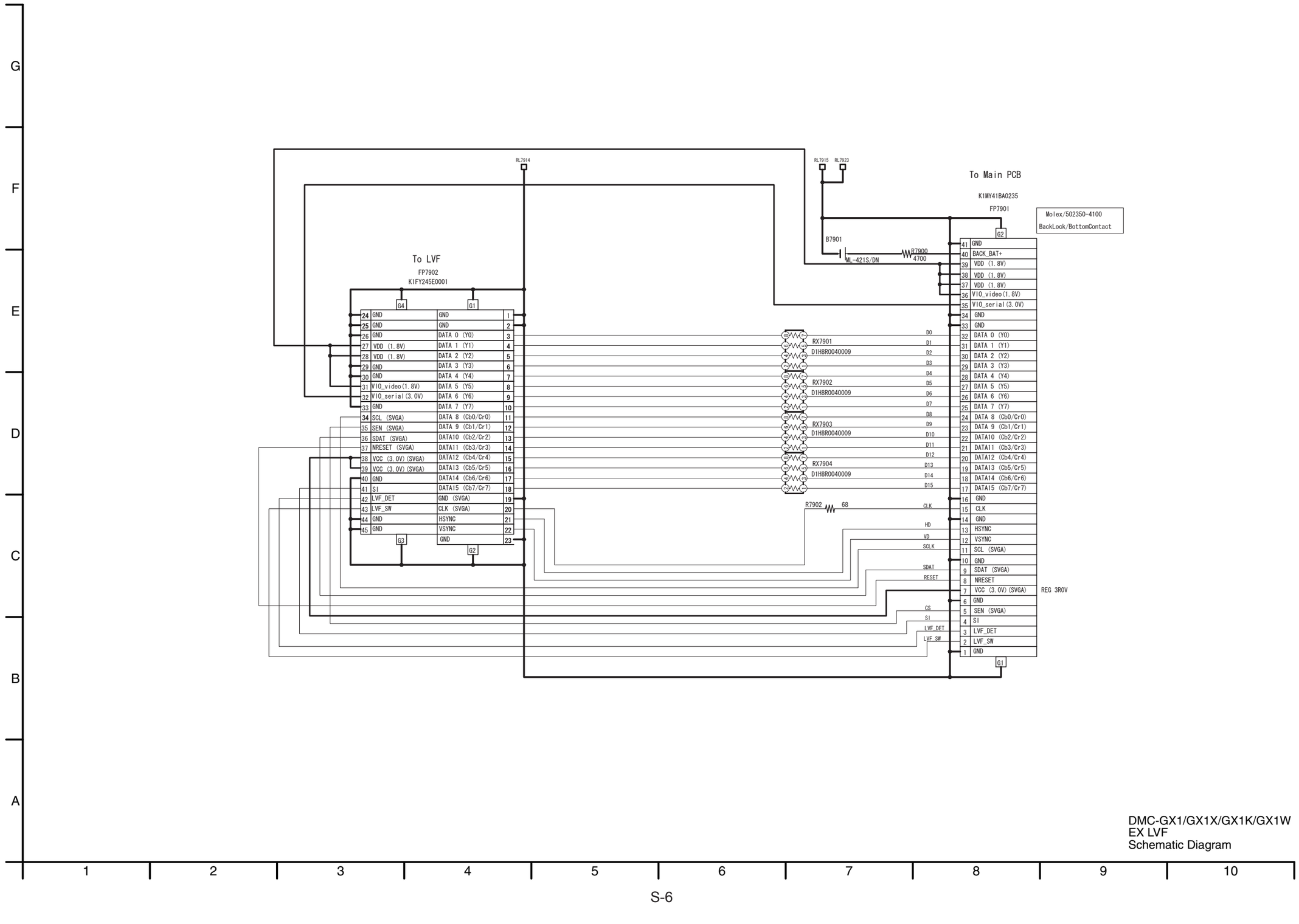


S3.3. Flash Schematic Diagram



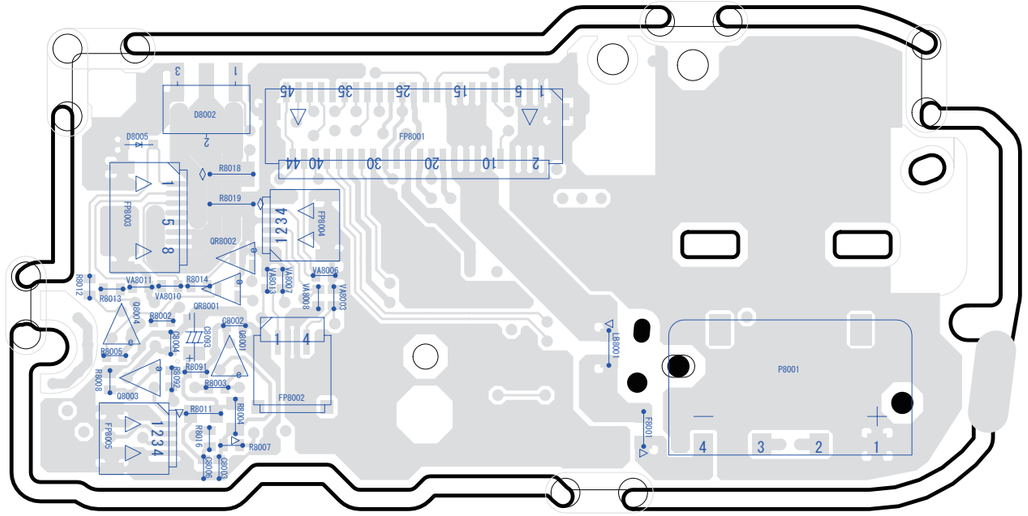
DMC-GX1/GX1X/GX1K/GX1W
Flash
Schematic Diagram

S3.4. EX LVF Schematic Diagram

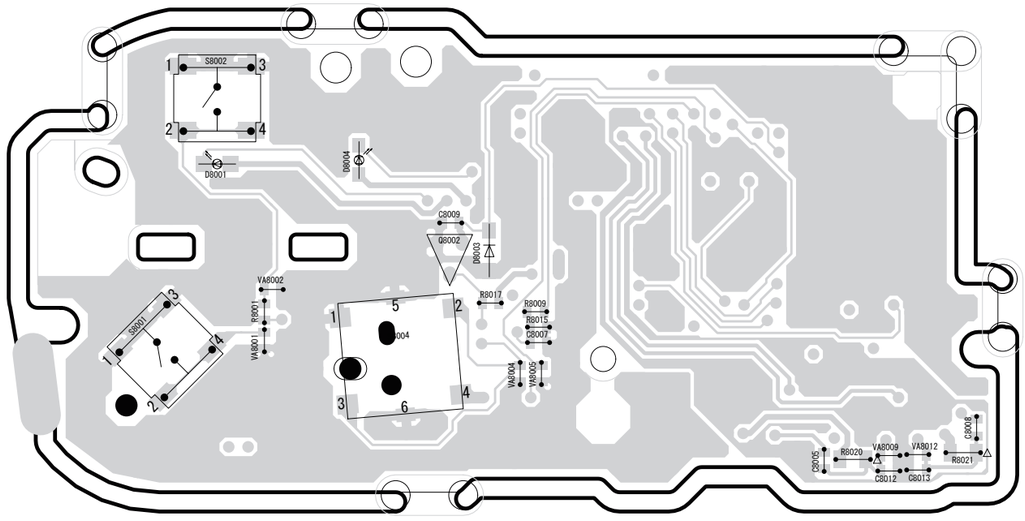


S4. Print Circuit Board

S4.1. Top P.C.B.



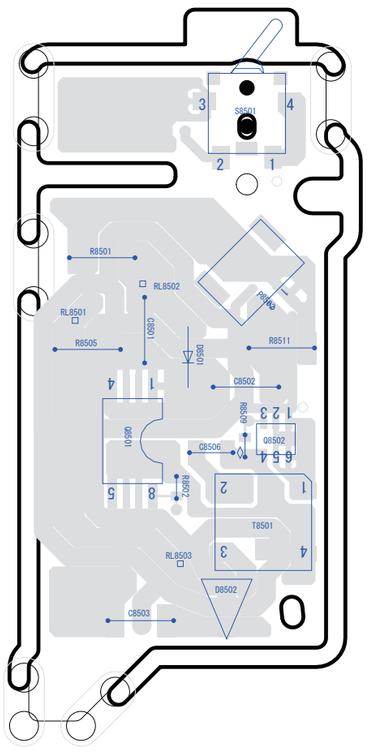
(Component Side)



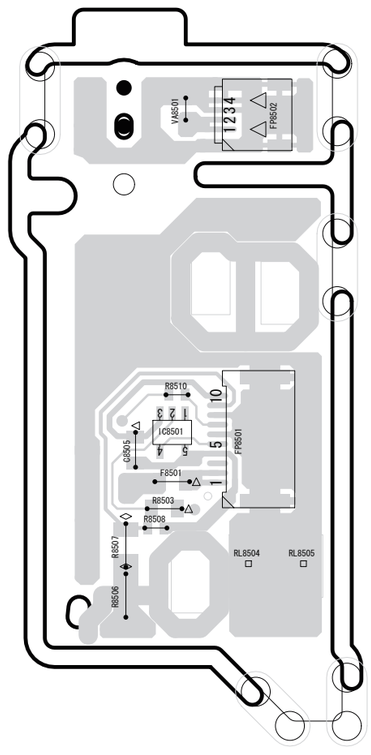
(Foil Side)

DMC-GX1/GX1X/GX1K/GX1W
Top P.C.B.

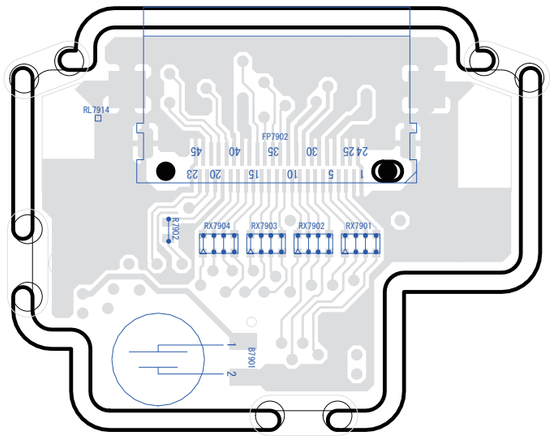
S4.2. Flash P.C.B. / S4.3. EX LVF P.C.B.



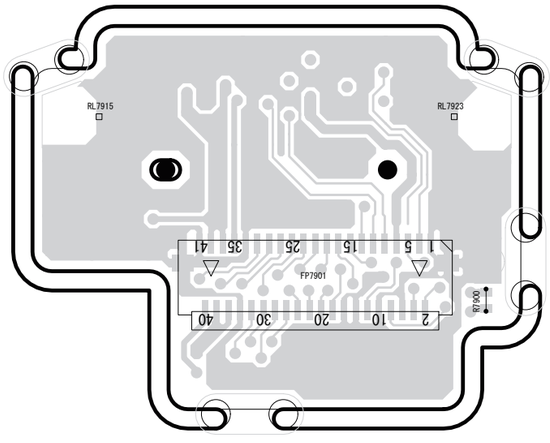
(Component Side)



(Foil Side)



(Component Side)



(Foil Side)

DMC-GX1/GX1X/GX1K/GX1W
Flash P.C.B.

DMC-GX1/GX1X/GX1K/GX1W
EX LVF P.C.B.

S5. Replacement Parts List

Note:
1. * Be sure to make your orders of replacement parts according to this list.
2. IMPORTANT SAFETY NOTICE
   Components identified with the mark ⚠ have the special characteristics for safety.
   When replacing any of these components, use only the same type.
3. Unless otherwise specified,
   All resistors are in OHMS, K=1,000 OHMS. All capacitors are in MICRO-FARADS (uf), P=uuF.
4. The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.
5. Supply of CD-ROM, in accordance with license protection, is allowable as replacement parts only for customers who accidentally damaged or lost their own.

E.S.D. standards for Electrostatically Sensitive Devices, refer to PREVENTION OF ELECTROSTATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES section.

About LENS MAIN BLOCK UNIT (Ref.203,308 and 402)

1. In case of the LENS MAIN BLOCK UNIT (Ref.203,308 and 402) defects, contact to the service department of sales company.

Definition of Parts supplier:

1. Parts marked with [ENERGY] in the remarks column are supplied from Panasonic Corporation Energy Company.
2. Parts marked with [PAVCSG] in the remarks column are supplied from PAVCSG. Others are supplied from AVC-CSC-SPC.

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP56158B	MAIN P.C.B.	1	(RTL) E.S.D. EG,EC,EF,EB
##	VEP56158A	MAIN P.C.B.	1	(RTL) E.S.D. PP,PC,EE,GC,
				GH,GT,GK,GN,GD
##	VEP50100A	TOP P.C.B.	1	(RTL) [PAVCSG] E.S.D.
##	VEP58171A	FLASH P.C.B.	1	(RTL) [PAVCSG] E.S.D.
##	VEP59109A	EX LVF P.C.B.	1	(RTL) [PAVCSG]
⚠ ##	VEK0S31	CAPACITOR P.C.B. UNIT	1	[PAVCSG]
##	VEP50100A	TOP P.C.B.		(RTL) [PAVCSG] E.S.D.
C8002	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	[PAVCSG]
C8004	F1G1A1040006	C.CAPACITOR CH 10V 0.1U	1	[PAVCSG]
C8005	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCSG]
C8007	F1G1E102A086	C.CAPACITOR CH 25V 1000P	1	[PAVCSG]
C8008	F1G0J1050007	C.CAPACITOR CH 6.3V 1U	1	[PAVCSG]
C8009	F1G1C1030008	C.CAPACITOR CH 16V 0.01U	1	[PAVCSG]
C8093	F3E0J106A009	E.CAPACITOR CH 6.3V 22U	1	[PAVCSG]
D8001	B3AEB0000141	DIODE	1	[PAVCSG] E.S.D.
D8002	B2ABDR000010	DIODE	1	[PAVCSG] E.S.D.
D8003	B0BC8R2A0266	DIODE	1	[PAVCSG] E.S.D.
D8004	B3ABB0000150	DIODE	1	[PAVCSG] E.S.D.
⚠ F8001	ERBRE2R50V	FUSE 32V 2.5A	1	[PAVCSG]
FP8001	K1MY45BA0235	CONNECTOR 45P	1	[PAVCSG]
FP8002	K1MN04BA0208	CONNECTOR 4P	1	[PAVCSG]
FP8003	K1MY08BA0370	CONNECTOR 8P	1	[PAVCSG]
FP8004	K1MY04BA0370	CONNECTOR 4P	1	[PAVCSG]
FP8005	K1MY04BA0370	CONNECTOR 4P	1	[PAVCSG]
LB8001	J0JGC0000038	FILTER	1	[PAVCSG]
P8001	K4ZZ04000057	CONNECTOR 4P	1	[PAVCSG]
Q8001	B1ABDF000017	TRANSISTOR	1	[PAVCSG] E.S.D.
Q8002	B1CFHC000005	TRANSISTOR	1	[PAVCSG] E.S.D.
Q8003	B1ABDF000017	TRANSISTOR	1	[PAVCSG] E.S.D.
Q8004	B1ABCF000103	TRANSISTOR	1	[PAVCSG] E.S.D.
QR8001	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	[PAVCSG] E.S.D.
QR8002	B1GBCFJJ0064	TRANSISTOR-RESISTOR	1	[PAVCSG] E.S.D.
R8001	ERJ2GEJ103X	M.RESISTOR CH 1/10W 10K	1	[PAVCSG]
R8002	ERJ2GEJ223X	M.RESISTOR CH 1/16W 22K	1	[PAVCSG]
R8003	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8004	ERA3YKD104V	M.RESISTOR 1/16W 100K	1	[PAVCSG]
R8005	ERJ2GEJ223X	M.RESISTOR CH 1/16W 22K	1	[PAVCSG]
R8007	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8008	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8009	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8011	ERA3YKD104V	M.RESISTOR 1/16W 100K	1	[PAVCSG]
R8012	ERJ2GEJ331X	M.RESISTOR CH 1/16W 330	1	[PAVCSG]
R8013	ERJ2GEJ331X	M.RESISTOR CH 1/16W 330	1	[PAVCSG]
R8014	ERJ2GEJ331X	M.RESISTOR CH 1/16W 330	1	[PAVCSG]
R8015	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8016	ERJ2GEJ102X	M.RESISTOR CH 1/16W 1K	1	[PAVCSG]
R8017	ERJ2GEJ473X	M.RESISTOR CH 1/16W 47K	1	[PAVCSG]
R8018	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	[PAVCSG]
R8019	ERJ6GEYJ106V	M.RESISTOR CH 1/10W 10M	1	[PAVCSG]
R8020	ERA3YED392V	M.RESISTOR 1/16W 3.9K	1	[PAVCSG]
R8021	ERA3YED392V	M.RESISTOR 1/16W 3.9K	1	[PAVCSG]
R8091	ERJ2GEJ223X	M.RESISTOR CH 1/16W 22K	1	[PAVCSG]
R8092	ERJ2GEJ333X	M.RESISTOR CH 1/16W 33K	1	[PAVCSG]
S8001	K0F111A00591	SWITCH	1	[PAVCSG]
S8002	K0F111A00591	SWITCH	1	[PAVCSG]
S8004	K0F212A00006	SWITCH	1	[PAVCSG]
VA8004	D4ED18R0A014	VARISTOR	1	[PAVCSG]
VA8005	D4ED18R0A014	VARISTOR	1	[PAVCSG]
VA8011	D4ED18R0A014	VARISTOR	1	[PAVCSG]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
##	VEP58171A	FLASH P.C.B.		(RTL) [PAVCSG] E.S.D.
C8501	F1K2J223A029	C.CAPACITOR 630V 0.022U	1	[PAVCSG]
C8502	F1K2J333A029	C.CAPACITOR 630V 0.033U	1	[PAVCSG]
C8503	F1K2J102A028	C.CAPACITOR 630V 1000P	1	[PAVCSG]
C8505	F1H0J1050012	C.CAPACITOR CH 6.3V 1U	1	[PAVCSG]
C8506	F1J1A106A024	C.CAPACITOR CH 10V 10U	1	[PAVCSG]
D8501	B0ECGP000006	DIODE	1	[PAVCSG] E.S.D.
D8502	B0EDAT000002	DIODE	1	[PAVCSG] E.S.D.
⚠ F8501	ERBRE1R50V	FUSE 32V 1.5A	1	[PAVCSG]
FP8501	K1MN10BA0108	CONNECTOR 10P	1	[PAVCSG]
FP8502	K1MY04BA0370	CONNECTOR 4P	1	[PAVCSG]
IC8501	C0ZBZ0000914	IC	1	[PAVCSG] E.S.D.
P8502	K1KA02ZA0001	CONNECTOR 2P	1	[PAVCSG]
Q8501	B1JBLP000022	TRANSISTOR	1	[PAVCSG] E.S.D.
Q8502	B1DFCG000020	TRANSISTOR	1	[PAVCSG] E.S.D.
R8501	ERJ8GEYJ105V	M.RESISTOR CH 1/4W 1M	1	[PAVCSG]
R8502	ERJ2GEJ104X	M.RESISTOR CH 1/16W 100K	1	[PAVCSG]
R8503	ERJ3GEYJ111V	M.RESISTOR CH 1/10W 110	1	[PAVCSG]
R8505	ERJ8GEYJ105V	M.RESISTOR CH 1/4W 1M	1	[PAVCSG]
R8506	ERJ6RED105V	M.RESISTOR CH 1/10W 1M	1	[PAVCSG]
R8507	ERJ6RED105V	M.RESISTOR CH 1/10W 1M	1	[PAVCSG]
R8508	ERJ2RHD153X	M.RESISTOR CH 1/16W 15K	1	[PAVCSG]
R8509	ERJ2GEJ153X	M.RESISTOR CH 1/10W 15K	1	[PAVCSG]
R8510	ERJ2GEJ560X	M.RESISTOR CH 1/10W 56	1	[PAVCSG]
R8511	ERJ8GEYJ472V	M.RESISTOR CH 1/4W 4.7K	1	[PAVCSG]
S8501	ESE18R62DXFD	SWITCH	1	[PAVCSG]
T8501	G5D1A0000066	TRANSFORMER	1	[PAVCSG]
##	VEP59109A	EX LVF P.C.B.		(RTL) [PAVCSG]
FP7901	K1MY41BA0235	CONNECTOR 41P	1	[PAVCSG]
FP7902	K1FY245E0001	CONNECTOR 45P	1	[PAVCSG]
R7900	ERJ2GEJ472X	M.RESISTOR CH 1/16W 4.7K	1	[PAVCSG]
R7902	ERJ2GEJ680X	M.RESISTOR CH 1/16W 68	1	[PAVCSG]
RX7901	D1H8R0040009	RESISTOR NETWORKS	1	[PAVCSG]
RX7902	D1H8R0040009	RESISTOR NETWORKS	1	[PAVCSG]
RX7903	D1H8R0040009	RESISTOR NETWORKS	1	[PAVCSG]
RX7904	D1H8R0040009	RESISTOR NETWORKS	1	[PAVCSG]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
1	VEP56158B	MAIN P.C.B.	1	(RTL) E.S.D. EG,EC,EF,EB
1	VEP56158A	MAIN P.C.B.	1	(RTL) E.S.D. PP,PC,EE,GC,
				GH,GT,GK,GN,GD
2	VGQ1C26	SHEET	1	
3	VGQ0Y03	FPC SHEET	1	
4	VXQ2214	M-BOX UNIT	1	
5	VMC2111	SHOE SPRING	1	
30	VGK3823	GRIP PIECE FRONT	1	[PAVCSG]
31	VGK3824	FRONT RING	1	[PAVCSG]
32	VGU0J48	LENS RELEASE BUTTON	1	[PAVCSG]
33	VMB4504	LENS RELEASE BUTTON SPRING	1	[PAVCSG]
34	VMP0A17	LENS RELEASE FIX PLATE	1	[PAVCSG]
35	VMP0A96	FRONT RING PLATE	1	[PAVCSG]
36	VYK5H56	FRONT CASE UNIT	1	(-S) [PAVCSG]
36	VYK5H55	FRONT CASE UNIT	1	(-K) [PAVCSG]
37	K0RC01100011	REAR OPERATION FPC	1	[PAVCSG]
38	VGK3825	GRIP PIECE REAR	1	[PAVCSG]
39	VGQ1A32	LCD FPC TAPE B	1	[PAVCSG]
40	VGQ1A32	LCD FPC TAPE B	1	[PAVCSG]
41	VMP0B01	REAR LCD PLATE	1	[PAVCSG]
42	VYK5H60	REAR CASE UNIT	1	(-S) [PAVCSG]
42	VYK5H58	REAR CASE UNIT	1	(-K) [PAVCSG]
43	VYK5H61	LCD UNIT	1	[PAVCSG]
51	VGQ0R70	CAPACITOR TAPE	1	[PAVCSG]
52	VMP0A98	TRIPOD	1	[PAVCSG]
53	VGQ0Y45	STRAP HOLDER	1	[PAVCSG]
54	VGU0H25	BATTERY LOCK KNOB	1	[PAVCSG]
55	VKF4966	JACK DOOR	1	(-S) [PAVCSG]
55	VKF4965	JACK DOOR	1	(-K) [PAVCSG]
56	VKM9654	BATTERY FRAME	1	[PAVCSG]
57	VMB4304	BATTERY LOCK SPRING	1	[PAVCSG]
58	VMB4516	BATTERY OUT SPRING	1	[PAVCSG]
59	VMB4543	BATTERY DOOR SPRING	1	[PAVCSG]
60	VMP0A97	BATTERY CASE	1	[PAVCSG]
61	VMP0A99	HEAT RADIATION PLATE	1	[PAVCSG]
62	VMS8213	BATTERY DOOR SHAFT	1	[PAVCSG]
63	VYF3468	BATTERY DOOR UNIT	1	(-S) [PAVCSG]
63	VYF3467	BATTERY DOOR UNIT	1	(-K) [PAVCSG]
⚠ 64	ML-421S/DN	BATTERY	1	[ENERGY] (B7901)
65	VEP59109A	EX LVF P.C.B.	1	(RTL) [PAVCSG]
66	VMP0B02	SHOE PLATE	1	[PAVCSG]
67	VWJ2321	MAIN-LVF FPC	1	[PAVCSG]
68	VWJ2322	MAIN-TOP FPC	1	[PAVCSG]
69	K0RC01100012	REAR DIAL SWITCH UNIT	1	[PAVCSG]
70	VEK0S34	MIC UNIT	1	[PAVCSG]
72	VGQ0Y46	MIC CUSHION (A)	1	[PAVCSG]
73	VGQ0Y47	MIC CUSHION (B)	1	[PAVCSG]
74	VGQ0Y48	MIC CUSHION (C)	1	[PAVCSG]
75	VYK5H70	TOP CASE UNIT	1	[PAVCSG]
75-1	VGK3848	MODE DIAL DECORATION	1	[PAVCSG]
75-2	VGU0K40	REC BUTTON	1	[PAVCSG]
75-3	VYK5G31	iA BUTTON	1	[PAVCSG]
75-4	VGU0K42	POWER SWITCH	1	[PAVCSG]
75-5	VYK5J82	MODE DIAL BASE	1	[PAVCSG]
75-6	VYQ5979	SHUTTER BUTTON UNIT	1	[PAVCSG]
75-7	VEK0S30	HOT SHOE UNIT	1	[PAVCSG]
75-8	VEP50100A	TOP P.C.B.	1	(RTL) [PAVCSG] E.S.D.
76	L0AA01A00059	SPEAKER	1	[PAVCSG]
⚠ 77	VEK0S31	CAPACITOR P.C.B. UNIT	1	[PAVCSG] (C7950)
79	VEP58171A	FLASH P.C.B.	1	(RTL) [PAVCSG] E.S.D.
80	VGQ0Y45	STRAP HOLDER	1	[PAVCSG]
81	VGQ0Y55	FLASH HOLDER	1	[PAVCSG]
82	VGQ0Z89	SPEAKER CUSHION	1	[PAVCSG]
83	VMB4544	FLASH SPRING	1	[PAVCSG]
84	VMP0B00	SIDE PLATE (R)	1	[PAVCSG]
85	VMP0B13	FLASH STOPPER	1	[PAVCSG]
86	VWJ2323	MAIN-FLASH FPC	1	[PAVCSG]
87	VYQ7121	EARTH LINE	1	[PAVCSG]
88	VYQ7174	FLASH LOCK UNIT	1	[PAVCSG]
88-1	VGU0L01	FLASH LOCK KNOB	1	[PAVCSG]
88-2	VGQ0Y54	FLASH LOCK HOLDER	1	[PAVCSG]
88-3	VMB4440	FLASH LOCK SPRING	1	[PAVCSG]
89	EFN-AMDH2ZD	FLASH UNIT	1	[PAVCSG]
90	VYQ7176	FLASH CASE UNIT	1	(-S) [PAVCSG]
90	VYQ7173	FLASH CASE UNIT	1	(-K) [PAVCSG]
91	VMS8137	FLASH SHAFT	1	[PAVCSG]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
92	VGQ1C68	GRIP FRONT TAPE		[PAVCSG]
93	VGQ0Y08	LCD PCB SHEET		[PAVCSG]
99	VGQ1C77	INDUCTOR CUSHION	1	[PAVCSG]
100	VGQ0T64-A	FPC SHEET	1	[PAVCSG]
B1	VHD2331-A	SCREW	1	
B2	VHD2331-A	SCREW	1	
B3	VHD2331-A	SCREW	1	
B4	VHD2198	SCREW	1	
B5	VHD2198	SCREW	1	
B6	VHD2198	SCREW	1	
B7	VHD2102	SCREW	1	(-S)
B7	VHD2103	SCREW	1	(-K)
B8	VHD2102	SCREW	1	(-S)
B8	VHD2103	SCREW	1	(-K)
B9	VHD2102	SCREW	1	(-S)
B9	VHD2103	SCREW	1	(-K)
B10	VHD2102	SCREW	1	(-S)
B10	VHD2103	SCREW	1	(-K)
B11	VHD2102	SCREW	1	(-S)
B11	VHD2103	SCREW	1	(-K)
B12	VHD2102	SCREW	1	(-S)
B12	VHD2103	SCREW	1	(-K)
B13	VHD2102	SCREW	1	(-S)
B13	VHD2103	SCREW	1	(-K)
B14	VHD2102	SCREW	1	(-S)
B14	VHD2103	SCREW	1	(-K)
B15	VHD2102	SCREW	1	(-S)
B15	VHD2103	SCREW	1	(-K)
B16	VHD2102	SCREW	1	(-S)
B16	VHD2103	SCREW	1	(-K)
B17	VHD2102	SCREW	1	(-S)
B17	VHD2103	SCREW	1	(-K)
B18	VHD2103	SCREW	1	
B19	VHD2323	SCREW	1	
B20	VHD2323	SCREW	1	
B21	VHD2323	SCREW	1	
B22	VHD2323	SCREW	1	
B30	XQN16+BJ4FN	SCREW	1	[PAVCSG]
B31	XQN16+BJ4FN	SCREW	1	[PAVCSG]
B32	XQN16+BJ4FN	SCREW	1	[PAVCSG]
B39	XQN16+BJ4FN	SCREW	1	[PAVCSG]
B40	XQN16+BJ4FN	SCREW	1	[PAVCSG]
B41	VHD2198	SCREW	1	[PAVCSG]
B42	VHD2286-A	SCREW	1	[PAVCSG]
B43	XQN16+BJ5FJK	SCREW	1	[PAVCSG]
B44	XQN16+BJ5FJK	SCREW	1	[PAVCSG]
B45	XQN16+BJ5FJK	SCREW	1	[PAVCSG]
B46	XQN16+BJ5FJK	SCREW	1	[PAVCSG]
B47	XQN16+BJ5FJK	SCREW	1	[PAVCSG]
B48	VHD2198	SCREW	1	[PAVCSG]
B49	VHD2168	SCREW	1	[PAVCSG]
B50	VHD2286-A	SCREW	1	[PAVCSG]
B51	VHD2198	SCREW	1	[PAVCSG]
B52	VHD1996	SCREW	1	[PAVCSG]
B53	XQN16+BJ3FN	SCREW	1	[PAVCSG]
B54	VHD2380	SCREW	1	[PAVCSG]
B55	VHD2380	SCREW	1	[PAVCSG]
B56	VHD2380	SCREW	1	[PAVCSG]
B57	VHD2380	SCREW	1	[PAVCSG]
B58	VHD2332	SCREW	1	[PAVCSG]
B59	VHD2332	SCREW	1	[PAVCSG]
B60	VHD2198	SCREW	1	[PAVCSG]

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
201	VGH5246	DECORATION RING	1	(GX1X)
202	VGQ0X41	SILVER RING TAPE	1	(GX1X)
203	---	LENS MAIN BLOCK UNIT	1	(GX1X)
				(NOT SUPPLIED) See "Notes"
204	VGQ0X42	LEVER COVER	1	(GX1X)
206	VEJ2327	MOUNT CONTACT UNIT	1	(GX1X)
207	VXQ2135	L MOUNT UNIT	1	(GX1X)
208	VDW2321	SHADING FRAME	1	(GX1X)
210	VMG2007	FLOATING RUBBER	1	(GX1X)
211	VMG2007	FLOATING RUBBER	1	(GX1X)
212	VMT2208	PCB CUSHION	1	(GX1X)
B201	VHD2298	SCREW	1	(GX1X)
B202	VHD2299	SCREW	1	(GX1X)
B203	VHD2299	SCREW	1	(GX1X)
B204	VHD2299	SCREW	1	(GX1X)
B205	VHD2246	SCREW	1	(GX1X)
B206	VHD2246	SCREW	1	(GX1X)
B207	VHD2246	SCREW	1	(GX1X)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
302	VDW2023	SHADING FRAME	1	(GX1K,GX1W)
303	VEJ2295	MOUNT CONTACT UNIT	1	(GX1K,GX1W)
304	VGH5186	DECORATION RING	1	(GX1K,GX1W)
306	VDW2024	L MOUNT UNIT	1	(GX1K,GX1W)
307	---	REAR FRAME UNIT	1	(GX1K,GX1W)
				(NOT SUPPLIED)
308	---	LENS MAIN BLOCK UNIT	1	(GX1K,GX1W)
				(NOT SUPPLIED) See "Notes"
309	VMG1855	FLOATING RUBBER	1	(GX1K,GX1W)
310	VMG1855	FLOATING RUBBER	1	(GX1K,GX1W)
311	VMG1855	FLOATING RUBBER	1	(GX1K,GX1W)
312	VMG1847	DUST PROOF RING	1	(GX1K,GX1W)
313	VGQ0Y87	SILVER RING TAPE 1	1	(GX1K,GX1W)
B301	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B302	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B303	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B304	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B305	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B306	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B307	XQN14+BJ4FNK	SCREW	1	(GX1K,GX1W)
B308	XQN2+AJ5FNK	SCREW	1	(GX1K,GX1W)
B309	XQN2+AJ5FNK	SCREW	1	(GX1K,GX1W)
B310	XQN2+AJ5FNK	SCREW	1	(GX1K,GX1W)
B311	XQN2+AJ5FNK	SCREW	1	(GX1K,GX1W)
B313	XQN14+AJ3FNK	SCREW	1	(GX1K,GX1W)
B320	XQN16+BJ5FNK	SCREW	1	(GX1K,GX1W)
B321	XQN16+BJ5FNK	SCREW	1	(GX1K,GX1W)
B322	XQN16+BJ5FNK	SCREW	1	(GX1K,GX1W)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
401	VYC1015	DECORATION RING	1	(GX1W)
402	-----	LENS MAIN UNIT	1	(GX1W)
				(NOT SUPPLIED) See "Notes"
403	VEJ2295	MOUNT CONTACT UNIT	1	(GX1W)
404	-----	REAR FRAME UNIT	1	(GX1W)
				(NOT SUPPLIED)
405	VXQ1940	L MOUNT UNIT	1	(GX1W)
406	VDW2116	SHADING FRAME	1	(GX1W)
B401	XQN16+BJ4FN	SCREW	1	(GX1W)
B402	XQN16+BJ4FN	SCREW	1	(GX1W)
B403	XQN16+BJ4FN	SCREW	1	(GX1W)
B404	XQN14+BJ3FN	SCREW	1	(GX1W)
B405	XQN14+BJ3FN	SCREW	1	(GX1W)
B406	XQN14+BJ4FNK	SCREW	1	(GX1W)
B407	XQN14+BJ4FNK	SCREW	1	(GX1W)
B408	XQN14+BJ4FNK	SCREW	1	(GX1W)
B409	VHD1868	SCREW	1	(GX1W)
B410	XQN14+AJ3FN	SCREW	1	(GX1W)
B411	XQN2+AJ5FN	SCREW	1	(GX1W)
B412	XQN2+AJ5FN	SCREW	1	(GX1W)
B413	XQN2+AJ5FN	SCREW	1	(GX1W)
B414	VHD2246	SCREW	1	(GX1W)
B415	VHD2246	SCREW	1	(GX1W)
B416	VHD2246	SCREW	1	(GX1W)

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 501	DE-A94AC	BATTERY CHARGER	1	EG,EC,EF,EB,EE,GN
⚠ 501	DE-A93BA	BATTERY CHARGER	1	PP,PC
⚠ 501	DE-A94BD	BATTERY CHARGER	1	GC,GH,GK,GD
⚠ 501	DE-A94CB	BATTERY CHARGER	1	GT
⚠ 503	-----	BATTERY	1	(GX1)
504	K1HY08YY0017	USB CABLE W/PLUG	1	(GX1)
506	VFC4765	SHOULDER STRAP	1	(GX1)
507	VFF0863-S	CD-ROM (OVERSEAS)	1	EG,PP,PC,EC,EF,EB,EE,GC,
				GH,GT,GN,GD
507	VFF0864-S	CD-ROM (CHINA)	1	GK
508	VQL2C67	OPERATING LABEL	1	PC
508	VQL2C68-1	OPERATING LABEL	1	GT
509	VPF1294	BAG, POLYETHYLENE	1	(GX1)
⚠ 511	VQT3T99	BASIC O/I	1	EG
		(GERMAN/FRENCH)		
⚠ 511	VQT3U00	BASIC O/I	1	EG
		(ITALIAN/DUTCH)		
⚠ 511	VQT3T96	BASIC O/I	1	PP
		(ENGLISH/SPANISH)		
⚠ 511	VQT3T97	BASIC O/I	1	PP
		(PORTUGUESE)		
⚠ 511	VQT3T98	BASIC O/I	1	PC
		(ENGLISH/CANADIAN FRENCH)		
⚠ 511	VQT3U01	BASIC O/I	1	EC
		(SPANISH/PORTUGUESE)		
⚠ 511	VQT3U02	BASIC O/I	1	EC
		(SWEDISH/DANISH)		
⚠ 511	VQT3U03	BASIC O/I	1	EC
		(FINNISH)		
⚠ 511	VQT3U04	BASIC O/I	1	EF
		(FRENCH)		
⚠ 511	VQT3U05	BASIC O/I	1	EB
		(ENGLISH)		
⚠ 511	VQT3U06	BASIC O/I	1	EE
		(RUSSIAN/UKRAINIAN)		
⚠ 511	VQT3U07	BASIC O/I	1	GC,GH
		(ENGLISH/		
		CHINESE(TRADITIONAL))		
⚠ 511	VQT3U08	BASIC O/I	1	GC
		(ARABIC/VIETNAMESE)		
⚠ 511	VQT3U09	BASIC O/I	1	GT
		(CHINESE(TRADITIONAL))		
⚠ 511	VQT3U10	BASIC O/I	1	GK
		(CHINESE(SIMPLIFIED))		
⚠ 511	VQT3U11	BASIC O/I	1	GN
		(ENGLISH)		
⚠ 511	VQT3U12	BASIC O/I	1	GD
		(KOREAN)		
⚠ 512	VFF0867	CD-ROM (INSTRUCTION BOOK)	1	EG,EC,EF,EB
⚠ 512	VFF0866	CD-ROM (INSTRUCTION BOOK)	1	PP,PC
⚠ 512	VFF0868	CD-ROM (INSTRUCTION BOOK)	1	EE,GC,GH,GN
⚠ 512	VFF0869	CD-ROM (INSTRUCTION BOOK)	1	GT,GD
⚠ 512	VFF0870	CD-ROM (INSTRUCTION BOOK)	1	GK
513	VPK5130	PACKING CASE	1	EG,EC,EF,EB,EE,GC,GH,GT,
				GN,GD
513	VPK5129	PACKING CASE	1	PP,PC
513	VPK5131	PACKING CASE	1	GK
514	VPN7303	PAD A	1	(GX1)
517	VPF1316	CAMERA BAG	1	(GX1)
520	VQL1Z22	NTSC LABEL	1	GT,GD
524	VQL2B12	COLOR LABEL	1	EG-S,EB-S,GC-S,GH-S,GT-S,
				GD-S
524	VQL2P71	COLOR LABEL	1	PP-S
525	VQL2B12	COLOR LABEL	1	EG-S,EB-S,GC-S,GH-S,GT-S,
				GD-S
525	VQL2P71	COLOR LABEL	1	PP-S
534	VKF4385	BODY CAP	1	(GX1)
535	VKF4970	HOT SHOE COVER	1	(GX1)
⚠ 550	K2CT39A00002	AC CORD W/PLUG	1	EB,GC,GH
⚠ 551	K2CQ29A00002	AC CORD W/PLUG	1	EG,EC,EF,EE,GC
⚠ 551	K2CR29A00001	AC CORD W/PLUG	1	GD
⚠ 552	K2CJ29A00002	AC CORD W/PLUG	1	GN
⚠ 553	K2CA29A00021	AC CORD W/PLUG	1	GT
⚠ 553	K2CA2YY00070	AC CORD W/PLUG	1	GK

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 601	DE-A94AC	BATTERY CHARGER	1	XEG,XEC,XEF,XEB,XEE,XGN
⚠ 601	DE-A93BA	BATTERY CHARGER	1	XPP,XPC
⚠ 601	DE-A94BD	BATTERY CHARGER	1	XGC,XGH,XGK,XGD
⚠ 601	DE-A94CB	BATTERY CHARGER	1	XGT
⚠ 603	-----	BATTERY	1	(GX1X)
604	K1HY08YY0017	USB CABLE W/PLUG	1	(GX1X)
606	VFC4765	SHOULDER STRAP	1	(GX1X)
607	VFF0863-S	CD-ROM (OVERSEAS)	1	XPP,XPC,XEG,XEC,XEF,XEB,
				XEE,XGC,XGH,XGT,XGN,XGD
607	VFF0864-S	CD-ROM (CHINA)	1	XGK
608	VQL2C67	OPERATING LABEL	1	XPC
608	VQL2C68-1	OPERATING LABEL	1	XGT
609	VPF1294	BAG, POLYETHYLENE	1	(GX1X)
⚠ 611	VQT3T99	BASIC O/I	1	XEG
		(GERMAN/FRENCH)		
⚠ 611	VQT3U00	BASIC O/I	1	XEG
		(ITALIAN/DUTCH)		
⚠ 611	VQT3T96	BASIC O/I	1	XPP
		(ENGLISH/SPANISH)		
⚠ 611	VQT3T97	BASIC O/I	1	XPP
		(PORTUGUESE)		
⚠ 611	VQT3T98	BASIC O/I	1	XPC
		(ENGLISH/CANADIAN FRENCH)		
⚠ 611	VQT3U01	BASIC O/I	1	XEC
		(SPANISH/PORTUGUESE)		
⚠ 611	VQT3U02	BASIC O/I	1	XEC
		(SWEDISH/DANISH)		
⚠ 611	VQT3U03	BASIC O/I	1	XEC
		(FINNISH)		
⚠ 611	VQT3U04	BASIC O/I	1	XEF
		(FRENCH)		
⚠ 611	VQT3U05	BASIC O/I	1	XEB
		(ENGLISH)		
⚠ 611	VQT3U06	BASIC O/I	1	XEE
		(RUSSIAN/UKRAINIAN)		
⚠ 611	VQT3U07	BASIC O/I	1	XGC,XGH
		(ENGLISH/		
		CHINESE(TRADITIONAL))		
⚠ 611	VQT3U08	BASIC O/I	1	XGC
		(ARABIC/VIETNAMESE)		
⚠ 611	VQT3U09	BASIC O/I	1	XGT
		(CHINESE(TRADITIONAL))		
⚠ 611	VQT3U10	BASIC O/I	1	XGK
		(CHINESE(SIMPLIFIED))		
⚠ 611	VQT3U11	BASIC O/I	1	XGN
		(ENGLISH)		
⚠ 611	VQT3U12	BASIC O/I	1	XGD
		(KOREAN)		
⚠ 612	VFF0867	CD-ROM (INSTRUCTION BOOK)	1	XEG,XEC,XEF,XEB
⚠ 612	VFF0866	CD-ROM (INSTRUCTION BOOK)	1	XPP,XPC
⚠ 612	VFF0868	CD-ROM (INSTRUCTION BOOK)	1	XEE,XGC,XGH,XGN
⚠ 612	VFF0869	CD-ROM (INSTRUCTION BOOK)	1	XGT,XGD
⚠ 612	VFF0870	CD-ROM (INSTRUCTION BOOK)	1	XGK
613	VPK5134	PACKING CASE	1	XEG,XEC,XEF,XEB,XEE,XGC,
				XGH,XGT,XGN,XGD
613	VPK5133	PACKING CASE	1	XPP,XPC
613	VPK5135	PACKING CASE	1	XGK
616	VPN7336	PAD D	1	(GX1X)
617	VPF1316	CAMERA BAG	1	(GX1X)
620	VQL1Z22	NTSC LABEL	1	XGT,XGD
624	VQL2B48	COLOR LABEL	1	XGK-S
624	VQL2B12	COLOR LABEL	1	XEG-S,XEC-S,XEF-S,XEB-S,
				XEE-S,XGC-S,XGH-S,XGT-S,
				XGN-S,XGD-S
624	VQL2P71	COLOR LABEL	1	XPP-S
625	VQL2B48	COLOR LABEL	1	XGK-S
625	VQL2B12	COLOR LABEL	1	XEG-S,XEC-S,XEF-S,XEB-S,
				XEE-S,XGC-S,XGH-S,XGT-S,
				XGN-S,XGD-S
625	VQL2P71	COLOR LABEL	1	XPP-S
634	VKF4385	BODY CAP	1	(GX1X)
635	VKF4970	HOT SHOE COVER	1	(GX1X)
641	VFC4605	LENS CAP REAR	1	(GX1X)
642	VYF3443	LENS CAP FRONT	1	(GX1X)
643	SFYF09A15Z	BAG FOR CAP UNIT	1	(GX1X)
⚠ 650	K2CT39A00002	AC CORD W/PLUG	1	XEB,XGC,XGH

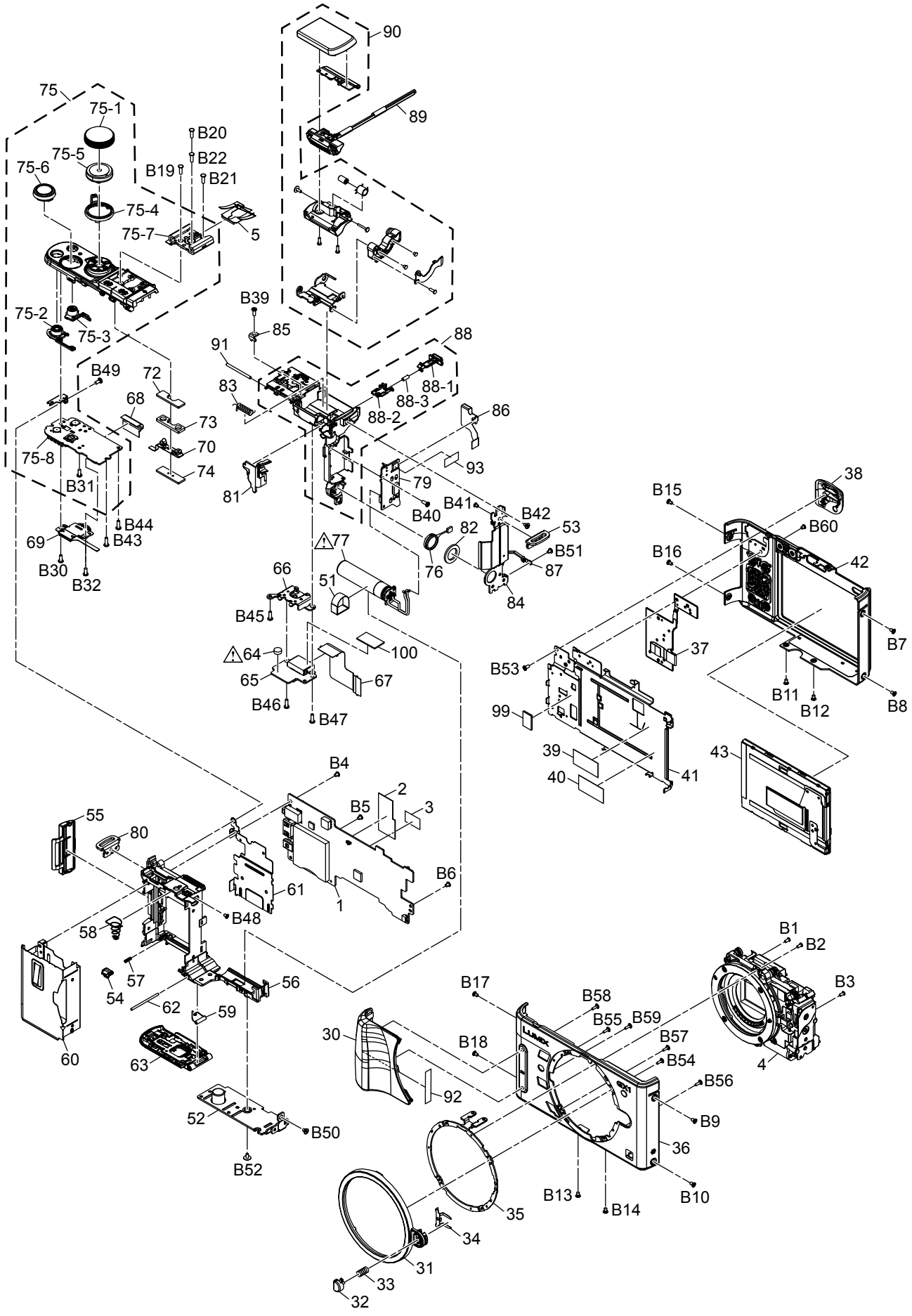
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 651	K2CQ29A00002	AC CORD W/PLUG	1	XEG,XEC,XEF,XEE,XGC
⚠ 651	K2CR29A00001	AC CORD W/PLUG	1	XGD
⚠ 652	K2CJ29A00002	AC CORD W/PLUG	1	XGN
⚠ 653	K2CA29A00021	AC CORD W/PLUG	1	XGT
⚠ 653	K2CA2YY00070	AC CORD W/PLUG	1	XGK
654	VQL2N81	OPERATING LABEL	1	XPC,XGT

Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 701	DE-A94AC	BATTERY CHARGER	1	KEG,KEC,KEF,KEB,KEE,KGN
⚠ 701	DE-A93BA	BATTERY CHARGER	1	KPP,KPC
⚠ 703	-----	BATTERY	1	(GX1K)
704	K1HY08YY0017	USB CABLE W/PLUG	1	(GX1K)
706	VFC4765	SHOULDER STRAP	1	(GX1K)
707	VFF0863-S	CD-ROM (OVERSEAS)	1	KEG,KPP,KPC,KEC,KEF,KEB,
				KEE,KGN
708	VQL2C67	OPERATING LABEL	1	KPC
709	VPF1294	BAG, POLYETHYLENE	1	(GX1K)
⚠ 711	VQT3T99	BASIC O/I	1	KEG
		(GERMAN/FRENCH)		
⚠ 711	VQT3U00	BASIC O/I	1	KEG
		(ITALIAN/DUTCH)		
⚠ 711	VQT3T96	BASIC O/I	1	KPP
		(ENGLISH/SPANISH)		
⚠ 711	VQT3T97	BASIC O/I	1	KPP
		(PORTUGUESE)		
⚠ 711	VQT3T98	BASIC O/I	1	KPC
		(ENGLISH/CANADIAN FRENCH)		
⚠ 711	VQT3U01	BASIC O/I	1	KEC
		(SPANISH/PORTUGUESE)		
⚠ 711	VQT3U02	BASIC O/I	1	KEC
		(SWEDISH/DANISH)		
⚠ 711	VQT3U03	BASIC O/I	1	KEC
		(FINNISH)		
⚠ 711	VQT3U04	BASIC O/I	1	KEF
		(FRENCH)		
⚠ 711	VQT3U05	BASIC O/I	1	KEB
		(ENGLISH)		
⚠ 711	VQT3U06	BASIC O/I	1	KEE
		(RUSSIAN/UKRAINIAN)		
⚠ 711	VQT3U11	BASIC O/I	1	KGN
		(ENGLISH)		
⚠ 712	VFF0867	CD-ROM (INSTRUCTION BOOK)	1	KEG,KEC,KEF,KEB
⚠ 712	VFF0866	CD-ROM (INSTRUCTION BOOK)	1	KPP,KPC
⚠ 712	VFF0868	CD-ROM (INSTRUCTION BOOK)	1	KEE,KGN
713	VPK5137	PACKING CASE	1	KEG,KEC,KEF,KEB,KEE,KGN
713	VPK5136	PACKING CASE	1	KPP,KPC
714	VPN7304	PAD B	1	(GX1K)
715	VPN7274	PAD C	1	(GX1K)
717	VPF1316	CAMERA BAG	1	(GX1K)
721	VYC1009	LENS HOOD	1	(GX1K)
724	VQL2B12	COLOR LABEL	1	KEG-S,KEF-S,KEB-S
724	VQL2P71	COLOR LABEL	1	KPP-S,KPC-S
725	VQL2B12	COLOR LABEL	1	KEG-S,KEF-S,KEB-S
725	VQL2P71	COLOR LABEL	1	KPP-S,KPC-S
734	VKF4385	BODY CAP	1	(GX1K)
735	VKF4970	HOT SHOE COVER	1	(GX1K)
744	VFC4315	LENS CAP REAR	1	(GX1K)
745	VYF3201	LENS CAP FRONT	1	(GX1K)
746	VPF1438	LENS BAG	1	(GX1K)
⚠ 750	K2CT39A00002	AC CORD W/PLUG	1	KEB
⚠ 751	K2CQ29A00002	AC CORD W/PLUG	1	KEG,KEC,KEF,KEE
⚠ 752	K2CJ29A00002	AC CORD W/PLUG	1	KGN

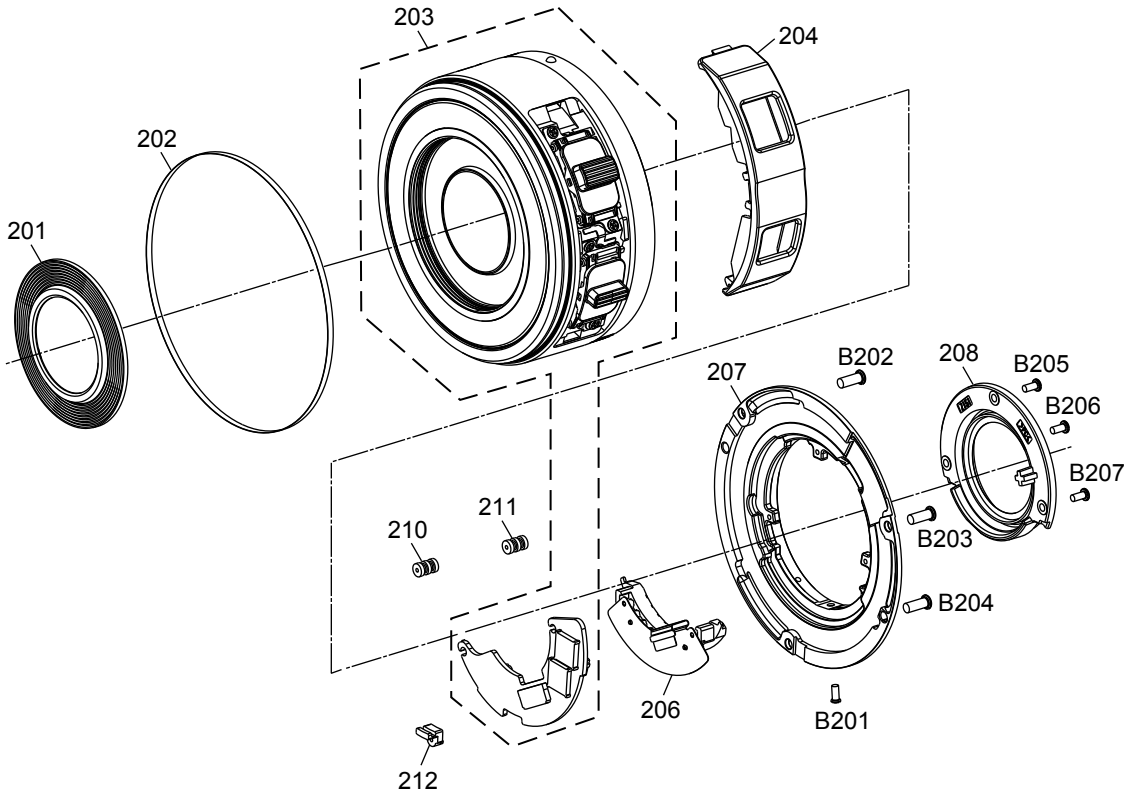
Ref.No.	Part No.	Part Name & Description	Pcs	Remarks
⚠ 801	DE-A94BD	BATTERY CHARGER	1	WGC,WGH,WGK,WGD
⚠ 801	DE-A94CB	BATTERY CHARGER	1	WGT
⚠ 803	-----	BATTERY	1	(GX1W)
804	K1HY08YY0017	USB CABLE W/PLUG	1	(GX1W)
806	VFC4765	SHOULDER STRAP	1	(GX1W)
807	VFF0863-S	CD-ROM (OVERSEAS)	1	WGC,WGH,WGT,WGD
807	VFF0864-S	CD-ROM (CHINA)	1	WGK
808	VQL2C68-1	OPERATING LABEL	1	WGT
809	VPF1294	BAG, POLYETHYLENE	1	(GX1W)
⚠ 811	VQT3U07	BASIC O/I	1	WGC,WGH
		(ENGLISH/		
		CHINESE(TRADITIONAL))		
⚠ 811	VQT3U08	BASIC O/I	1	WGC
		(ARABIC/VIETNAMESE)		
⚠ 811	VQT3U09	BASIC O/I	1	WGT
		(CHINESE(TRADITIONAL))		
⚠ 811	VQT3U10	BASIC O/I	1	WGK
		(CHINESE(SIMPLIFIED))		
⚠ 811	VQT3U12	BASIC O/I	1	WGD
		(KOREAN)		
⚠ 812	VFF0868	CD-ROM (INSTRUCTION BOOK)	1	WGC,WGH
⚠ 812	VFF0869	CD-ROM (INSTRUCTION BOOK)	1	WGT,WGD
⚠ 812	VFF0870	CD-ROM (INSTRUCTION BOOK)	1	WGK
813	VPK5140	PACKING CASE	1	WGC,WGH,WGT,WGD
813	VPK5141	PACKING CASE	1	WGK
814	VPN7337	PAD E	1	(GX1W)
815	VPN7274	PAD C	1	(GX1W)
817	VPF1316	CAMERA BAG	1	(GX1W)
820	VQL1Z22	NTSC LABEL	1	WGT,WGD
821	VYC1009	LENS HOOD	1	(GX1W)
824	VQL2B12	COLOR LABEL	1	WGC-S,WGH-S,WGT-S,WGD-S
824	VQL2B48	COLOR LABEL	1	WGK-S
825	VQL2B12	COLOR LABEL	1	WGC-S,WGH-S,WGT-S,WGD-S
825	VQL2B48	COLOR LABEL	1	WGK-S
834	VKF4385	BODY CAP	1	(GX1W)
835	VKF4970	HOT SHOE COVER	1	(GX1W)
841	VFC4605	LENS CAP REAR	1	(GX1W)
842	VYF3371	LENS CAP FRONT	1	(GX1W)
843	SFYF09A15Z	BAG FOR CAP UNIT	1	(GX1W)
844	VFC4315	LENS CAP REAR	1	(GX1W)
845	VYF3201	LENS CAP FRONT	1	(GX1W)
846	VPF1438	LENS BAG	1	(GX1W)
⚠ 850	K2CT39A00002	AC CORD W/PLUG	1	WGC,WGH
⚠ 851	K2CQ29A00002	AC CORD W/PLUG	1	WGC
⚠ 851	K2CR29A00001	AC CORD W/PLUG	1	WGD
⚠ 853	K2CA29A00021	AC CORD W/PLUG	1	WGT
⚠ 853	K2CA2YY00070	AC CORD W/PLUG	1	WGK

S6. Exploded View

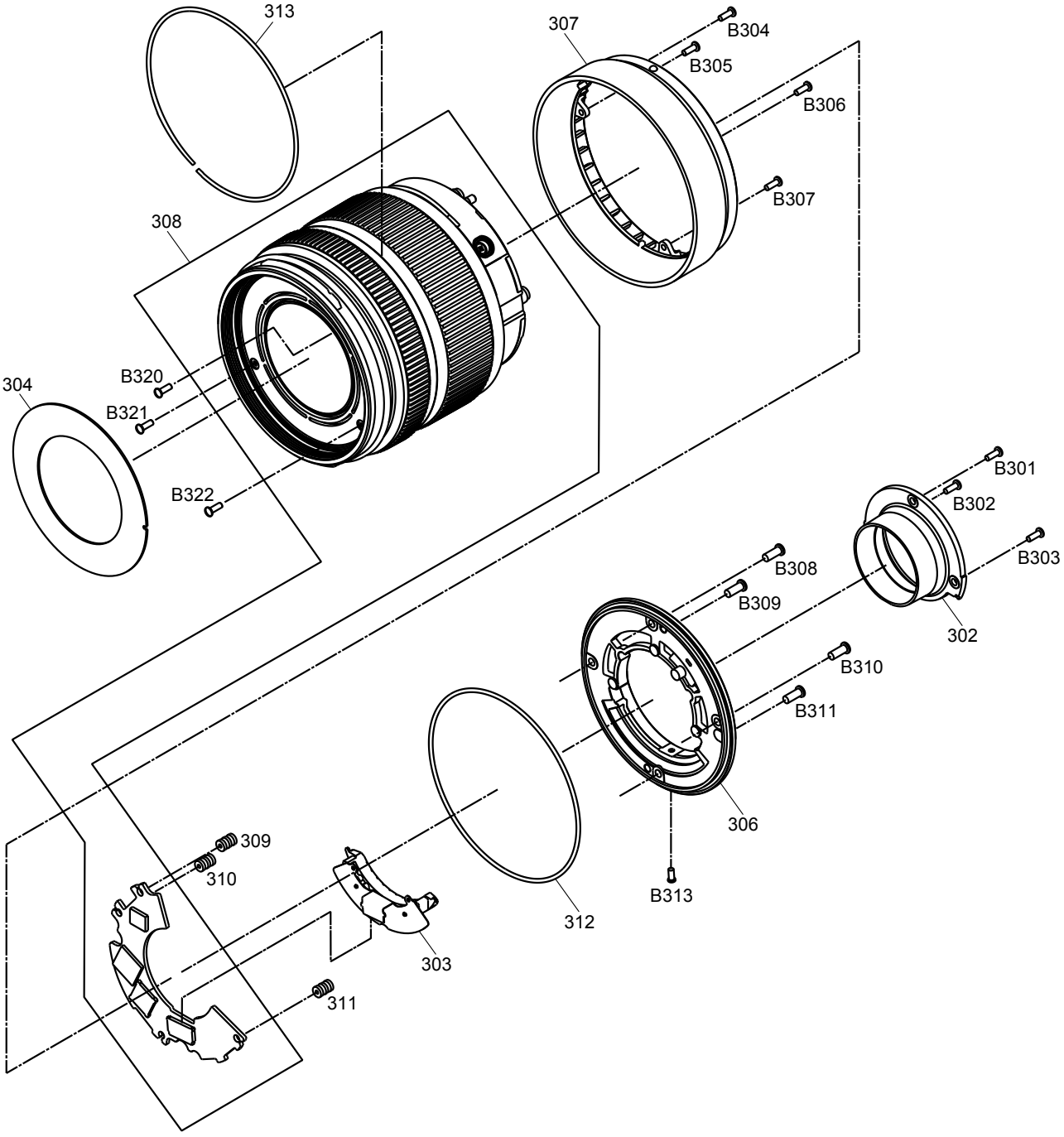
S6.1. Frame and Casing Section



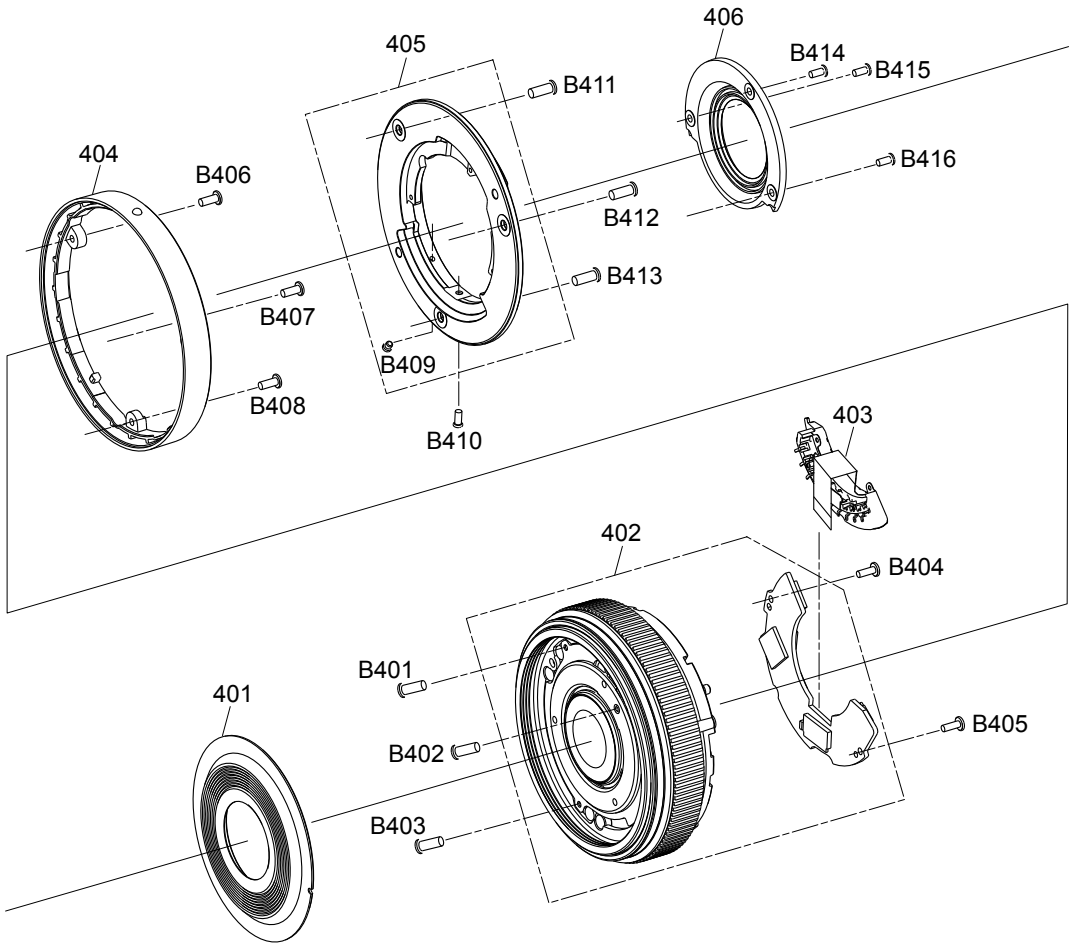
S6.2. Camera Lens Section (1)



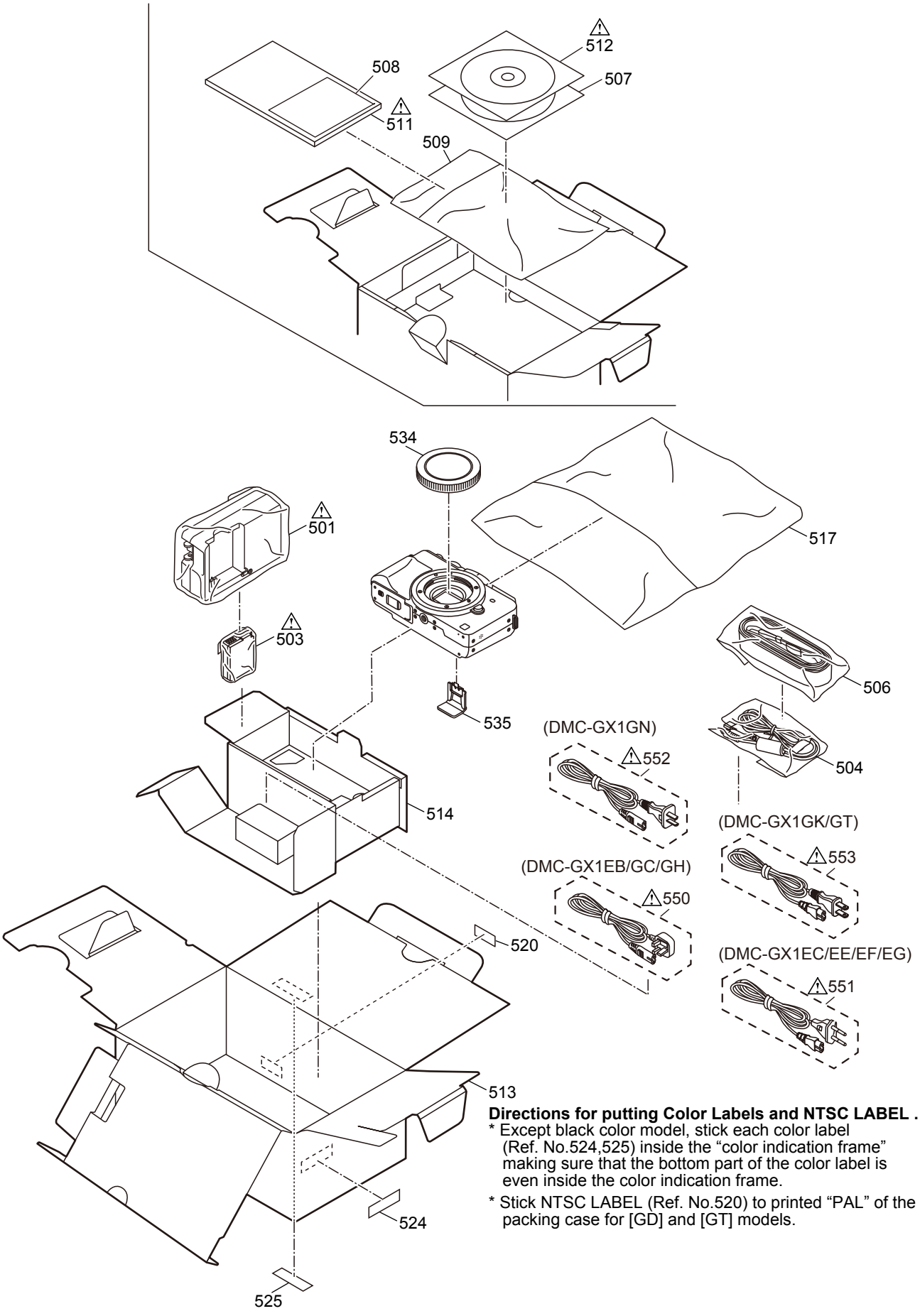
S6.3. Camera Lens Section (2)



S6.4. Camera Lens Section (3)



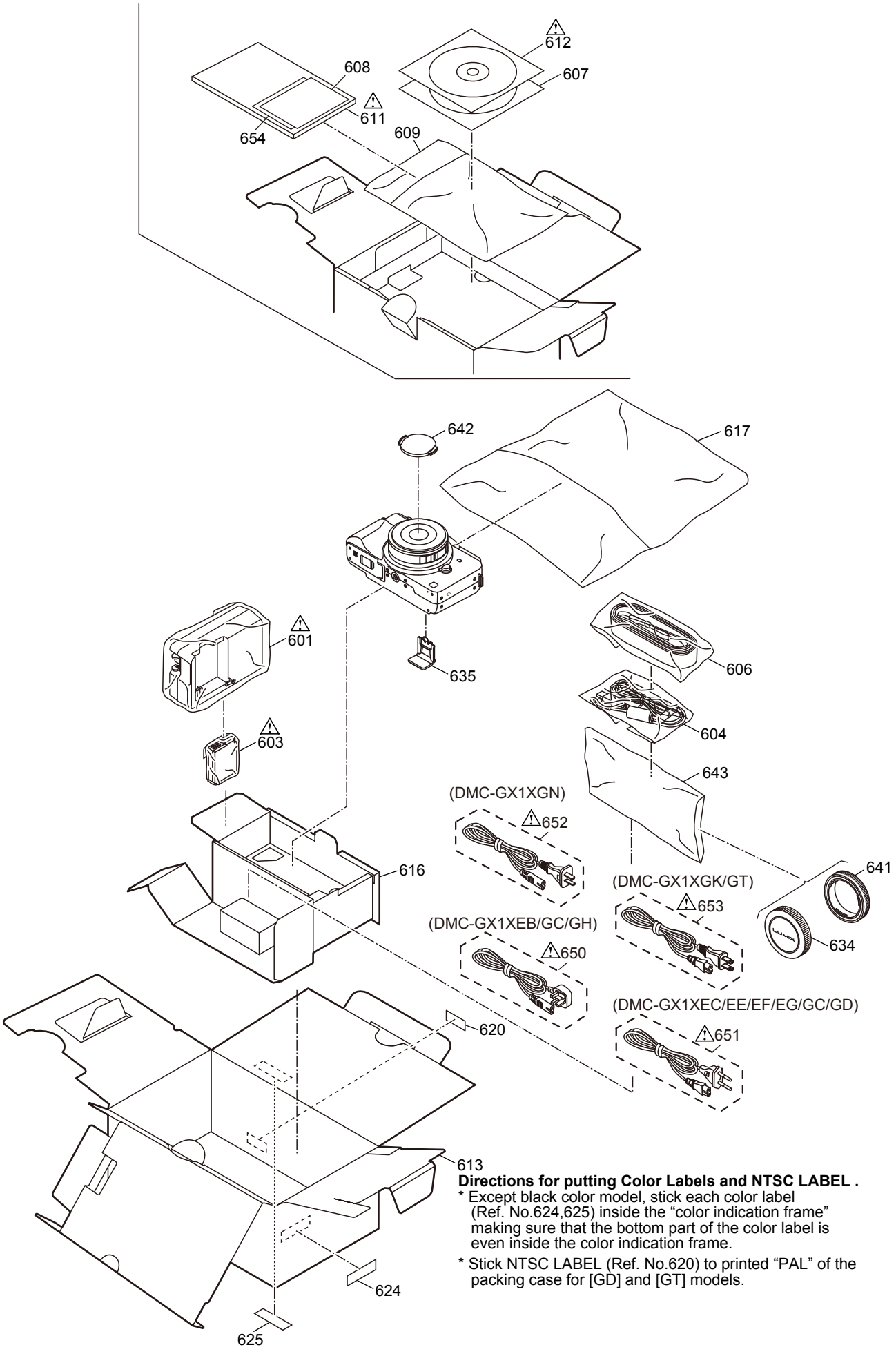
S6.5. Packing Parts and Accessories Section (1)



Directions for putting Color Labels and NTSC LABEL .

* Except black color model, stick each color label (Ref. No.524,525) inside the “color indication frame” making sure that the bottom part of the color label is even inside the color indication frame.
* Stick NTSC LABEL (Ref. No.520) to printed “PAL” of the packing case for [GD] and [GT] models.

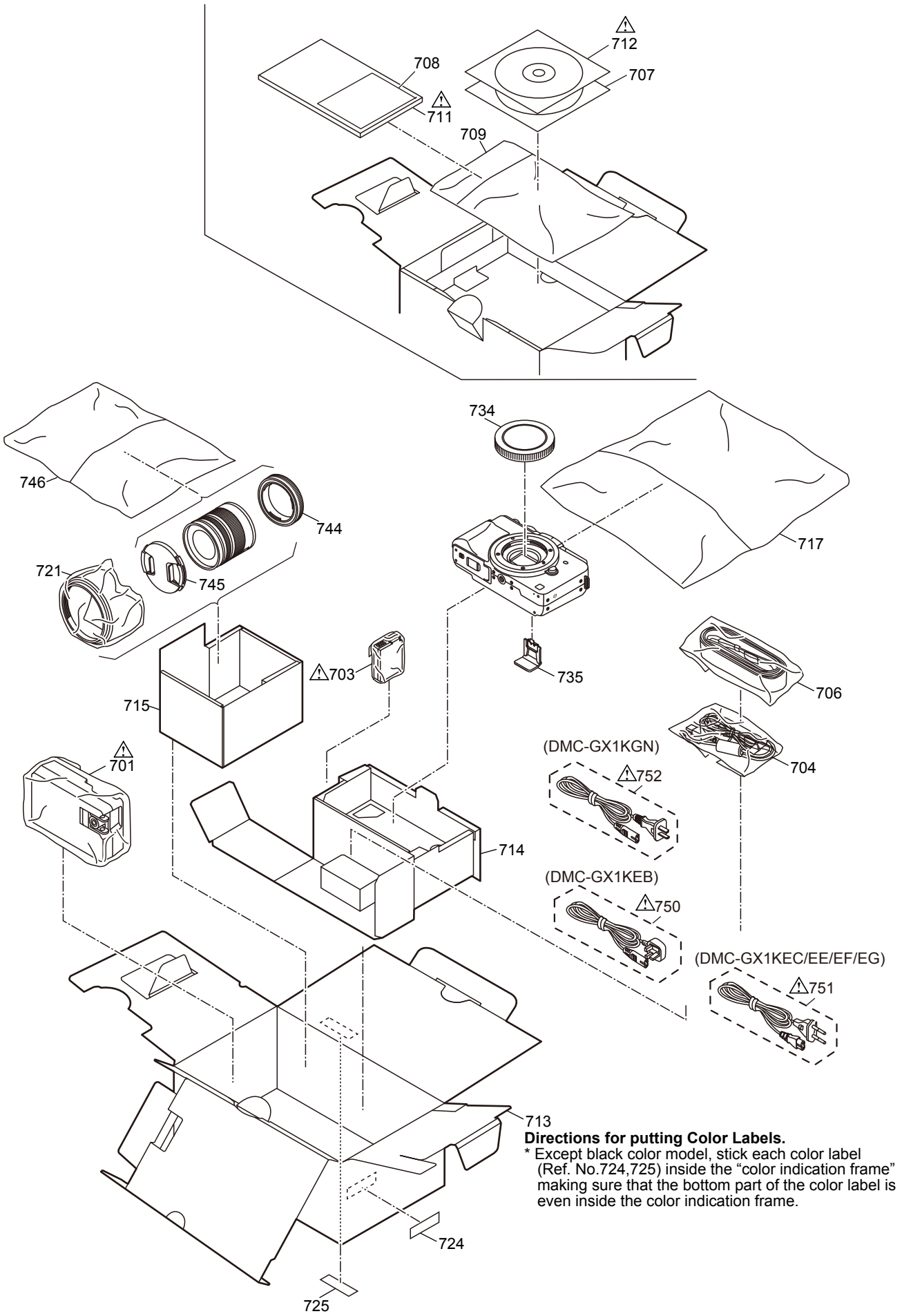
S6.6. Packing Parts and Accessories Section (2)



Directions for putting Color Labels and NTSC LABEL .

* Except black color model, stick each color label (Ref. No.624,625) inside the “color indication frame” making sure that the bottom part of the color label is even inside the color indication frame.
* Stick NTSC LABEL (Ref. No.620) to printed “PAL” of the packing case for [GD] and [GT] models.

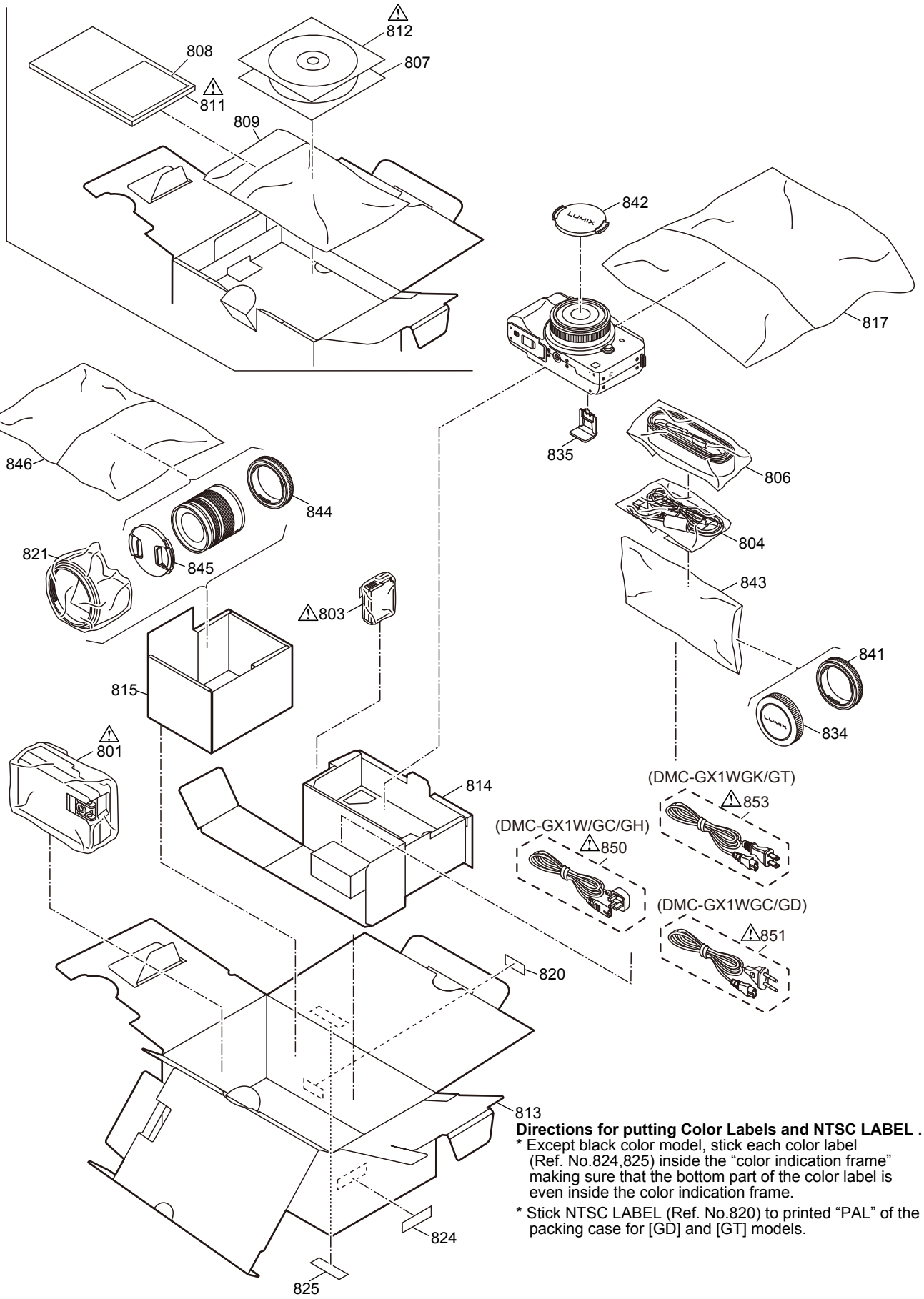
S6.7. Packing Parts and Accessories Section (3)



Directions for putting Color Labels.

* Except black color model, stick each color label (Ref. No.724,725) inside the “color indication frame” making sure that the bottom part of the color label is even inside the color indication frame.

S6.8. Packing Parts and Accessories Section (4)



Directions for putting Color Labels and NTSC LABEL .

* Except black color model, stick each color label (Ref. No.824,825) inside the “color indication frame” making sure that the bottom part of the color label is even inside the color indication frame.
* Stick NTSC LABEL (Ref. No.820) to printed “PAL” of the packing case for [GD] and [GT] models.